

NEW: PRODUCT REVIEWS

Connections

AUSTRALIA'S ENTERTAINMENT & TECHNOLOGY MONTHLY

BUYERS GUIDE

PC/Profile Spots
Live Mixing Consoles

MERCURY LOUNGE

Big PA detailed

DIRTY POWER

Blame the lighting?

SAVAGE GARDEN

The People
The Soundcheck
The Production

AUDIO ISDN

Dial audio-
Bill Foster tells how

JUNE 1997

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NEW PRODUCT REVIEWS

This month: QSC Powerlight, Sony DPS-V77,
ETC Source Four, High End Studio Color



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JUNE 1997. Number 44

Reviewed inside this issue



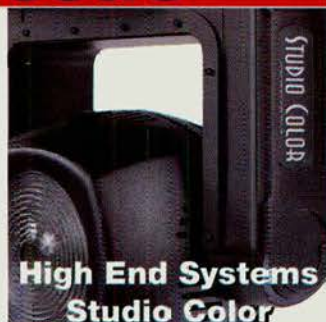
ETC Source 4



QSC Powerlight 1.8



Sony DPS V77: one r/u, every effect?



High End Systems Studio Color

PLUS NEW GAFF! PLUS PowerMac 7300... Reviews YOU can use!

P & O launch Entertainment Technology show in Shanghai

Australian trade mission to China next April

Shanghai is the venue for the first credible tradeshow for Entertainment Technology to be held in China, the fastest growing global economy.

Entertainment Technology is an emerging industry in Australasia, with local manufacturers developing export business in Asia.

The new trade show is scheduled weeks before ENTECH in April 1998. The host city Shanghai is China's largest city with a population of more than 16 million. It boasts almost 1,500 nightclubs, 88 theatres, and 89 film production studios.

P & O Events are a growing UK based event management firm who also run the PLASA trade show under contract in London. They part own and manage the new Intex exhibition centre in Shanghai.

P & O Events managing director Jonathan Gould recently visited ENTECH for discussions regarding an Australian Entertainment Technology trade mission to the show in Shanghai next April. Mr Gould made a detailed presentation on the nature of the show and the facilities at the new Intex Centre.

"We have planned an exhibition which will make it easy and efficient for you to trade into China" he said.

P & O contend they have addressed issues of concern which include pre show briefings, and:

- Provision of interpreters for each exhibitor;
- Correctly targeted trade attendance;
- Strict noise limits;
- 'Westernised' hotel accommodation, stand construction services, and properly identified transport.

Connections Publishing have established a strategic alliance with P & O Events, and will organise an Australian trade mission to the show. This will entail a joint 'Australasian' exhibition space. In addition any firm interested in a larger booth can arrange this through Connections.

Allied with this, Connections will shortly establish an event management company to properly service ENTECH, the Shanghai show, and to seek management of other trade shows and conventions in the region.

• **More info, call Caroline Grafton, (02) 9876-3530**

Digitally Hooked

Now that ISDN service is widely available, it's time for studios to think about getting connected

By Bill Foster

With a small (and rapidly decreasing) number of exceptions, when we make a normal telephone call the circuit passes through an A/D converter at the exchange, is routed through a totally digital network and subsequently converted back to analogue at the exchange near to the called party.

This transition has been virtually seamless; the only obvious changes being the changeover from pulse to touch tone phones. To translate this into studio terms, the ISDN - the initials stand for Integrated Services Digital Network - allows direct digital access to the telecoms network; in similar fashion to the digital I/O on a DAT machine. This permits much higher data rates to be passed through the system, as well as providing a number of other benefits. The international ISDN standard is 64 thousand bits a second (64kbit/s) per channel, but while that may be around double that used by a computer modem over an analogue circuit, it is nowhere near fast enough to carry the 1.44Mbit/s data rate of a 44.1kHz stereo digital audio signal. Someone wishing to send au-

dio over an ISDN circuit is therefore faced with two choices: either aggregate a number of channels together, which is expensive (especially on international calls), or compress the audio using a device known as a codec (coder/decoder). In general, it is the latter option that is now being successfully used by studios, film companies and record labels around the world for applications ranging from remote voice overs and overdubs, to the auditioning (continued over)

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ISDN for your studio

of mixes. The further the distance between locations, the more cost effective using the ISDN becomes. For example, while a link between, say, Perth and Sydney to record a voice-over might cost \$50; compare this with the cost of a mid-week return flight, not to mention cabs to and from the airport, a possible overnight hotel stay and meals. The alternative scenario sees the artist stroll into a studio near his or her home, do the voice-over and be home for tea.

However, before you rush to pick up the phone and order your ISDN lines, there is one not insignificant drawback. As yet, there is no standard for audio coding over the ISDN, and as a result there are a number of equipment options - which can lead to the situation where Studio A does not have the same equipment as Studio B.

DIFFERENT SYSTEMS

In fact, there are four coding systems in general use today for high quality (ie 15/20kHz bandwidth) audio. Two of these are proprietary and will not work with other systems; the other two, although 'standards' can also present some problems.

Dolby AC-2 (also known as DolbyFax): This system has been widely adopted in the film industry and offers 20Hz-20kHz bandwidth over four ISDN channels (which is actually two lines because ISDN service is provided as two 64kbit/s channels per line). The latest Dolby units also incorporate an MPEG Layer II codec (see below).

MPEG Layer II: A coding algo-

rithm developed under the auspices of an international committee, which means that, in theory, all codecs conforming to the MPEG Layer II standard can be interconnected. However, to achieve an acceptable audio bandwidth, more than one ISDN channel has to be aggregated - two for stereo, four when two discrete channels are called for. But some codecs perform this aggregation differently from others, making them incompatible. Although there has been some work to overcome this situation lately, anyone considering the purchase of a codec conforming to the MPEG Layer II standard should therefore make sure they do a test with all the parties to whom they are intending to connect before handing over any money.

MPEG Layer III: This uses a higher compression ratio than Layer II, saving data bandwidth. The drawback is longer delays which makes the system less suitable for two-way dialogue.

APT: The second proprietary system, and the one offering the shortest coding delay. It is for this reason that APT coding has found favour with broadcasters. Audio bandwidth is directly proportionate to data bandwidth: four ISDN channels are needed for 15kHz stereo; six channels for 22.5kHz. Although all these systems are capable of providing 'CD quality' audio signals, the 'masking' techniques they use preclude their use for the transfer of material intended for CD manufacture. The problem with any coding system is that it can produce some audibly unaccept-

able artifacts if it hits another coding system further down the line. For example, were a digital master to be sent over an ISDN line and then subsequently be used for, say, mastering a MiniDisc, there could be a problem. The same applies to a film mix as these are frequently subjected to all sorts of compression algorithms once they are on general release: Dolby AC-3 and DTS are both masking systems, and TV satellite broadcasters also use data compression in the transmission chain.

So where can the ISDN be useful, and profitable, from a studio's point of view? As previously stated, in the area of voice-overs, overdubs and mix auditioning. In the first two cases, the presence of one 'compressed' track in the middle of a mix containing 23 or 47 other audio tracks will almost certainly go unnoticed, while a mix sent over the wire to be listened to by the producer, A&R man or artist will be virtually indistinguishable from the original, and will enable any reservations about a mix to be sorted out immediately while the multitrack is still on the machine and the board set.

An ISDN connection can also be good for international business. Networks such as EDnet in San Francisco - which has member studios across America and a worldwide network of affiliates - act as a 'clearing house' for artists looking for an ISDN-connected studio. If, for example, an international artist was visiting Australia and a radio station in Europe wanted to do an interview, the logical step is to put

the artist in a local studio with an ISDN line and conduct the interview in 'studio quality' rather than over a phone line. The same applies if said artist was asked to 'guest' on someone's album but there was no time to fly to the country in question.

Admittedly, the initial cost of installing a line (or lines) is quite high, and the codecs are not yet in the sub-\$1,000 range, but nevertheless getting hooked up to the digital highway can still be a very viable proposition.

[Bill Foster is a technical writer with a background in digital audio. Between 1993 and 1995 he acted as consultant to the UK-based ISDN network, The Audio Exchange.]

Australian Suppliers of audio ISDN technology

- EAV call 03 9417 1644
 - Amber Technology call 02 9975 1368.
 - Syntec International call 02 9417 4700
- (Sorry if we missed anyone)

See also these netsites:

Dan Kegal's ISDN Page:
www.informatik.uni-bremen.de/~henker/dank/
www.sms.co.uk/isdn/dialog4.htm
www.musicamusa.com
www.dolby.com
www.ednet.net/EDnet/apt.htm

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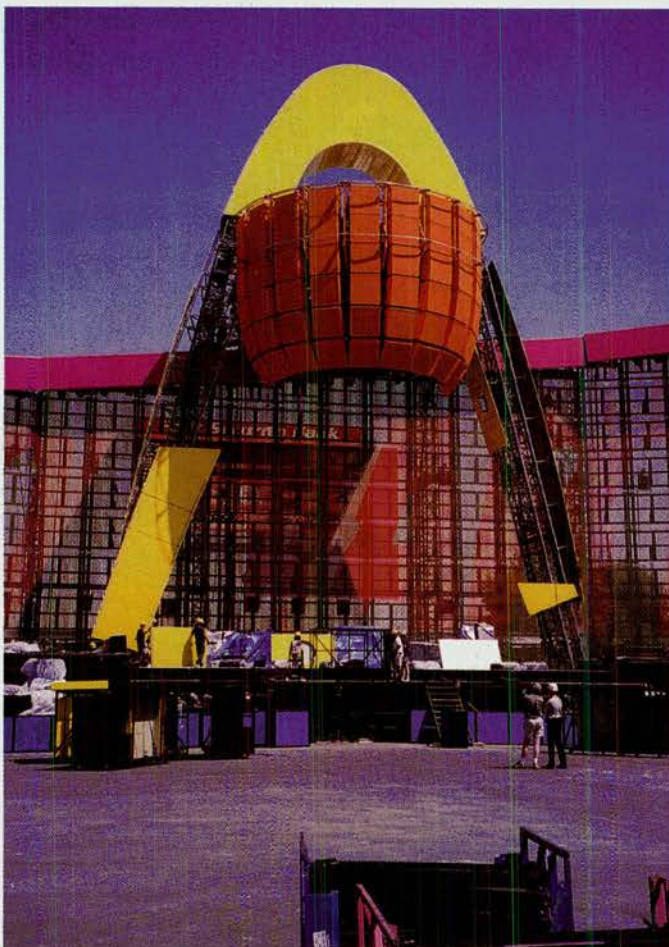
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U2 POPMART's Set Construction

It is estimated that the set on U2's current tour will be rigged and de-rigged at over 120 venues. The feature is a Golden Arch and this is how its done: the Arch comes flat packed, each leg measures 3m deep by 2m wide and the arch is constructed of trussing faced with lightweight but strong panels as cladding, each weighing 27kg. There are 80 panels on each leg.

British company The Triple E group were contracted to design the means to attach the cladding. Two sets of Unitrack are used on each face of the two legs and the panels are fitted to custom carriers that slide onto the track. A chain hoist is used to pull the panels up the arch. The rigging machinery has been finished in a light grey to enable riggers, who will be rigging mainly in the dark, to see what they're doing.

More than 1km of track has been provided weighing 3 tonnes.



Thacker quits Klipsch

Citing parent company takeover money hassles, ex-pat Aussie Ian Thacker quit Arkansas based Klipsch Pro early this year.

Our report last month detailed recent sales of Klipsch products, including Sega World in Sydney. Ian Thacker says he did assist in the de-

sign of the system, but is no longer working for Klipsch.

"At the moment I'm sitting fat and pretty on a one year severance because K-Pro don't want me to compete against them. This inconvenience has caused me to lose 10 strokes from my golf game and catch more fish than we can eat"

Correction

• Last months story on the Music Production seminar at ENTECH spelled Savage Garden manager **John Woodruff's** name incorrectly.

• Studio **PRO TALK** also ended prematurely. See page 28 for a fixup. Sorry!

MORE NEWS PAGE 18

Editors Note

This issue marks a new phase at Connections - we are now doing product reviews.

Readers need product information beyond PR and brochures, and one approach by magazine publishers has been to 'bench test' review products. It's fast.

I have refused outright to do this for years.

The reason is that no technical journalist, no matter how smart, can unpack a product and learn all about it in 3 hours. Also there is an established practice that **Trade Magazines will do anything to sell an advertisement**. We are asked often to review a product in exchange for an advert. The answer always is: no. I'd prefer to go broke - and may yet go penniless!

Worse still is The Reprint. This request often comes from PR flacks who offer to write you a story, then pay \$\$\$ for a reprint!

Readers, stay alert, much of today's print media is bought PR.

Our approach is to appraise the product through the eyes of an end user. Have a look.

We are interviewing people who have had exposure to the product, and who use it. They have bought the product.

Finally, we had a Review on a recording product typeset but pulled it at the last minute because the manufacturer gave our reviewer bullshit. The last straw with THAT firm whose culture worldwide is unhelpful at best. Should I name them? Tell me....

• Feedback: 1-800-635-514.

-Julius Grafton

The Laws of Physics

The Art of Listening

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Sydney: 323 Pacific Highway, Crows Nest, NSW 2065 Ph: (02) 9954 5100 Fax: (02) 9954 4927
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INSIDE
THE
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PowerLight™

4.0

PowerWave™
Switching Technology
allows for the high-speed
transformer to be small
and dramatically
light weight.

The charged capacitor
bank distributes current
as needed before the
transformer—delivering
continuous, stiff supply
voltage.

A temperature-
controlled, continuously
variable speed fan
blows heated air rear
to front, keeping the
amp and the rack cool.

An aluminum heat-sink
tunnel designed with the
maximum possible
surface area transfers
and dissipates heat.

The new PowerLight 4.0 introduces massive power to a series of amplifiers that have already become a benchmark for excellent audio performance and reliability. PowerWave™ Switching Technology (patent pending), at the heart of the PowerLights, is **the power supply technology for the future**. The 4.0 clearly demonstrates why...

SUPERIOR AUDIO

The 4.0 achieves remarkable audio quality because **voltage supply to the output section is powerful and stiff**. There are virtually no sags following transients or long peak power demands. You won't hear typical modulation from AC ripple or garbling during clipping. The bass is ultra-clean and fat. Highs are pure and unstressed.

MAXIMUM EFFICIENCY

A PowerWave transformer "flies" at 115 kHz (2000 times the frequency of a conventional transformer). Waste heat from resistance is almost nil. The supply is 90% efficient! And the 4.0 features **the latest three-step Class H linear output circuitry** for maximum audio quality and efficiency.

"NO-FAIL" PERFORMANCE

QSC's renowned protection circuitry is enhanced by the PL 4.0's "smart" supply which matches power delivery to changing musical demand. The 4.0's thermal management keeps the amp cool under extreme conditions (even 2 ohm loads). And with the 4.0, **EMI and RFI are absent**, making the amp safe for wireless mics.



Less power sag, less clipping intermodulation, more bass impact, cleaner transients...PowerLight.



INCOMPARABLE AMP

You won't see or hear another amp with the power and performance of the PowerLight 4.0. Call your QSC Dealer or A.R. Audio (02) 9810 5300 for complete details.

The front panel of the PL 4.0 features comprehensive LED status arrays, detented gain controls with soft touch knobs and 2dB steps for easy resetting.

Made in USA.

4 PowerLight Models

Output Power in Watts per Channel			
MODEL	8Ω *	4Ω *	2Ω **
PowerLight 1.0	200 Watts	325 Watts	500 Watts
PowerLight 1.4	300 Watts	500 Watts	700 Watts
PowerLight 1.8	400 Watts	650 Watts	900 Watts
PowerLight 4.0	900 Watts	1400 Watts	2000 Watts

*20 Hz-20 kHz, 0.1% THD, ** 1 kHz, 1% THD

PowerLight 4.0 Key Features

- ▶ PowerWave™ Switching Technology
- ▶ Advanced Thermal Management System
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NEW

AHB Rack Mount Mixer

The MixWizard Series of a small mixers from Allen & Heath made their first appearance in Australia at Entech 97. The WZ16:2 is a simplified version of the AHB GL2 - incorporating many of the same features.

These include a 4-band EQ, 6 Auxiliaries, 100mm Faders, Direct Outs in addition to a quick change rotating connector system making it suitable for desk or rack mounting.

The WZ16:2 is configured with 16 Mic Inputs and 2 Stereo Returns top Left and Right balanced outputs. Each Mic Channel is equipped with Input Gain, -20dB Pad, 80Hz High Pass Filter, 4-Band EQ with 2 Wide Ranging Mid Sweeps, 6 Auxiliaries on Separate

knobs featuring a unique mono or stereo monitoring capability, pan, mute, PFL and 100mm Faders.

L-R outputs are supplemented by a unique AB output which can provide a second pre or post fader or mono sum, or be configured as a local stereo monitor out.



The WZ16:2 was designed for maximum flexibility says AHB, making it suitable for a wide variety of applications including Stereo PA, Live Recording, Keyboard Mixing, Sub Mixing, and Stage Monitor Mixing.

- \$2795 inc. tax.
- Contact: **A.R. Audio Engineering**, T 02 9810 5300

Installed

◆ Ten Capital has installed a **AMS NEVE Logic 3** in its post-production facilities in Canberra. Part of the Southern Cross Network, Ten Capital broadcasts to three sub-markets covering NSW. Systems Engineer, Rod Giddy said, 'For us the main selling points were cost, functionality, expandability and system longevity. The Logic 3 is also reliable and stable.' The Logic 3 will be used predominantly for the post-production of all television commercials and promotions at Ten Capital's centralised Canberra operation.

They say that the Logic 3 will also be used periodically for documentary post production work and is part of a larger plan to have an all-digital non-linear audio and video post-production facility. 'This is a system that will knit well with the rest of our facility by providing features such as OMFI (Open Media Framework Interchange) with our planned non-linear video suite and multiple machine control.' Giddy said.

• Aust. NEVE distributors: **Syncrotech** T 02 9417-5088

◆ AAV Duplication services have recently installed two new **Weircliffe BTE301 heavy duty mini conveyor degaussing systems**. Designed for high volume erasure of VHS format video cassettes, the BTE301 will erase up to 3000 VHS cassettes per hour. The new Weircliffe degaussers are installed in AAVs Sydney and Melbourne plants. Geoff Leaver, General Manager of AAV Duplication Services said, 'The new BTE301s provide excellent depth of erasure, eliminating the risk of a cassette with recorded programmes being returned to production.'

• Weircliffe distributors: **Amber Technology**, T 02 9975 1211

Portable LCD multimedia projector

Philips say that the ProScreen 2700 is their most powerful top-of-the-range portable multimedia projector to date in its class. The ProScreen 2700 has light output measuring

350 ANSI Lumen and the optical components provide even light distribution over the entire picture surface delivering balanced brightness.

Its 250w metal halide lamp

has a 1000 hour lifespan, and can be simply replaced by the user. Other features

- The projector can be operated by remote control;
- It weighs 9.5 kilograms which makes it both manageable and transportable;
- Can be used in any international location as it is equipped with multiple power input and multi power input and multi standard video inputs for PA, SEDAM, NTSC and S-Video signals.

The Philips ProScreen 2700 also features RGB computer data inputs which can handle PC and Macintosh signals and audio inputs.

- Around \$9452 inc. tax.
- Call Lawrence Hooker at **Philips Communications and Security Systems**, T C2 9888 0464





Stephen Francis (Timelock Productions, right) with Anthony McKenzie of Audio Visual Design (BASF distributors) test the new tape in an ADAT

New ADAT tape

BASF say that their new Digital Master 938 ADAT tape has been given the 'thumbs up' from recording systems manufacturer, Alesis. They put the new tape through a range of tests resulting in verdicts of high durability and minimal error rates.

Alesis' John Sarappo said the tests included running the tape over 100 loops, shuttling repeatedly over a small section of the tape and standard usage in recording and overdubbing sessions.

According to BASF, Alesis recommends BASF DM 938 to customers for ADAT and ADAT-XL. Sydney's Timelock Produc-

tions using four ADAT machines, was one of the first to use the new tape. Timelock owner and operator Stephen Francis, who has worked with Bob Geldof, Melissa, The Divinyls and the Australian Ballet, said, 'The BASF Digital Master tape supports the ADAT system and is ideal for our facility.'

BASF Digital Master 938 is available in 40 and 60 minute playing times. This backcoated tape has good running properties and comes with an anti-static shell to reduce the risk of contamination.

• Call **Yuri Schwarschko** at BASF: T 03 9212 1569

Mega (Big) Phone

The MIPRO C8600 portable PA system features a VHF wireless mic receiver, line level aux input, a 20w RMS internal amplifier and a full range high efficiency 5" driver.

The Wireless mic receiver features tone squelch for Off-Air muting, and is compatible with MIPRO hand-held and lavalier transmitters. The unit is powered by a 2.7Ah sealed lead acid battery, which is included with the unit and provides up to 8 hours of continuous use.

The battery is charged by plugging in the plug-pack adaptor also supplied with the unit. The internal battery charger then brings the SLA cell up to full charge.

A threaded base insert allows the portable unit to be mounted on a standard mic stand for use in lectures, meetings and the like. Several receivers can be used with a single transmitter for an increased coverage area. In non-walkabout applications where background music is required, the C 8600 has a 3.5mm line level

input which is mixed internally with the wireless mic input and controlled by a common volume



control. There is also an auxiliary (line level) audio input.

It weighs in at 3kg with the battery installed.

The retail price for the unit also includes DC plugpack, 12V 2.7 Ah battery and either a hand held or lavalier wireless mic transmitter. Two frequencies are available, 203.3MHz and 220.6Mhz.

• Retail: \$ 849 (or \$535 without matching transmitter)

• Contact:
Altronic Distributors,
T 09 328 2199

MAJOR TRADE SHOWS

- **SHOWtech**, 3-5 June, Berlin, Germany. Call +44 171 486-1951
- **REPLitech** Int, 3-5 June, San Jose, USA. Fax +1 914-328-2020
- **INFOCOMM**, June 5 - 7, LA Convention Centre. +1 703 273-7200
- **NIGHTWAVE '97**, June 7 - 10, Rimini, Italy. +39 541 711-249.
- **AES 8th Regional, Japan** June 25-27, Tokyo. Call +81 45939-7009
- **Exposhow & Pro Audio '97**, June 24-27, St Petersburg Russia. Call + 7 812 325 6245.
- **SMPTE**, Sydney Exhibition Centre. July 1 - 4. Call (02) 9977-0838
- **PALA '97**, July 14-16, Singapore WTC. +65 227-0688
- **PLASA 1997**, Sept 7-10th. London. Call +44 323 410-335

- **AIMS '97**, Aust Int Music Show.

NOTE NEW DATES Sept. 19-22. Ph (03) 9867-4222

- **AES 103rd**, Sept 26-29, New York. Fax +1 212 682-0477.
- **LDI '97** October 24-26, Las Vegas. Ph. +1 212 229-2965
- **REPLitech Asia**, new dates: HK, Nov 5-7 Fax +1 914-328-2020
- **Vision & Audio '97**, Nov. 4-6, Earls Court, London.
- **ENTECH 1998**, April 23-25, Sydney. Fax + 61 2 9876-5715
- **AES 104th**, May 16-19, 1998. Amsterdam. Fax +1 212 682-0477.
- **AES 105th**, Sept 26-29, 1998. San Francisco. Fax +1 212 682-0477.



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SR40-8 LARGE FORMAT CONSOLE

CENTRE-MASTER SECTION • 40x8x3 CONFIGURATION PLUS 4 EXTRA STEREO AUX RETURNS • 12x4 MATRIX MIXER
8 AUX SENDS • ELABORATE EQ • ULTRAMUTE™ MUTE SECTION • PLUS MANY MORE FEATURES • \$17,995 RRP



ULTRAMUTE™ MUTE SECTION

Both the SR40-8 and SR56-8 feature UltraMute, a computerised group muting system that stores and recalls the particular mute states of the console. UltraMute encompasses all mic inputs and stereo inputs A1-A4, as well as aux, sub and matrix outputs. In Group mode you can assign inputs to a mute group and turn that group on and off at any time, and you can mute multiple groups simultaneously.

Snapshot mode comes in handy for things like plays, musicals, corporate presentations, etc. Since these events are scripted (planned in advance), in Snapshot mode you can store a sequence of mute groups which correspond to scenes, dialog or other cues during an event and recall them in that order.

The world's first affordable large-format live sound mixers!

With features normally found on \$60,000+ mixers, Mackie Designs' new SR40-8 and SR56-8 large-format, centre-master-section mixing consoles break the high-feature/high-price barrier. From elaborate EQ and routing flexibility to group muting and a built-in matrix mixer, these no-compromise consoles are loaded.

How can Mackie offer these feature-packed mixing consoles at such unheard-of prices? Because

they specialise in mixers - not pianos, motorcycles, powered water skis and mixers. Their investment in modern world-class manufacturing technologies, including radial, axial and surface-mount parts insertion machines, keeps their manufacturing costs low. These consoles are equally at home as the prime front of house mixer in an auditorium, church or other large venue.

Call (043) 291 711 for detailed information and the location of your nearest Authorised Mackie Dealer.

PRESONUS BLUEMAX

SMART COMPRESSOR/LIMITER
\$895 SUGGESTED RETAIL PRICE



BlueMax is the world's first and only full-featured smart compressor/limiter - a true dream toy. Through innovation, comes a revolutionary product designed to take the worry out of using dynamics processing for studio recording, live sound reinforcement, broadcast applications and permanent sound system installations.

BlueMax boasts 5 studio proven preset compressor and limiter settings for those instruments that need dynamics processing the most. Imagine, dialing up the perfect compression setting for that killer snare sound or putting vocals in your face without losing the rest of the mix. Don't worry about threshold and ratio, attack or release, soft knee or hard knee ever again.

We did it all for you in one beautifully designed, easy to use half rack space unit!

In addition, Blue Max can be run in Manual Mode that gives you full control over compression parameters including variable input/output, attack and release times as well as ratio settings from 1:1 to 20:1. Full on-board metering shows input/output levels and gain reduction. Blue Max can be operated in stereo or mono with high gain mono inputs for plugging in instruments. Blue Max also includes a sidechain for

de-essing, ducking and other forms of spectral processing.

Inputs and outputs are 1/4" TRS un-balanced. Operation is switchable +4dBu or -10dBV. Blue Max is housed in a single 1/2 rack space, all steel chassis, and in keeping with the PreSonus "no wall wart" tradition, has an internal power supply. Using our proven dynamics processing technology...

Blue Max is a dream toy that truly gives you Intelligent Dynamics Control.

MACKIE FR SERIES M-1400 AMPLIFIER

- 1400 WATTS, 4 OHMS BRIDGED
- 700 + 700 WATTS INTO 2 OHMS
- CONSTANT GRADIENT T-DESIGN COOLING
- BUILT-IN SWEEPABLE CONSTANT DIRECTIVITY HORN COMPENSATION
- SWEEPABLE HIGH PASS FILTER
- BUILT-IN SWEEPABLE LOW-PASS SUBWOOFER CROSSOVER
- \$1495 RRP



The FR Series Engineering Team is supervised by Greg Mackie and headed by Cal Perkins. Cal has definitely written his share of modern amplifier history. He received a degree in electrical engineering at CalPoly. After a stint at JBL, where he specialised in 'blowing up speakers', Cal went on to design and build amps for Marantz, amps and powered mixers for Fender, and contributed to what eventually became Ramsa's line highly respected contractor amps. Cal went back to JBL and helped develop their EON™ line.

BUT DON'T JUST TAKE OUR WORD

Steve Lowe from 'Dreams To Reality Productions' in Sydney has six Mackie M1400's. "I've been running the M1400's on FOH and foldback, bridged into 4 ohms, and also loaded down to 2 ohms. They have performed flawlessly and don't get hot!"

Audio Technology, Darwin, have installed three Mackie M1400's and two SR24-4 mixers into the NT Parliament. Michael Di Toro from AT states: "The sound is very clean and clear, with lots of headroom. The M1400's features are fantastic. Now we don't have to buy an external crossover."

Australian country singer/songwriter and recording artist Cam Fletcher has two Mackie M1400's in his touring PA: "I'm using the M1400's for FOH and foldback. These Mackie amps are crystal clear and the limiter is an absolute bliss to work with. Their performance at the gigs is second to none - they are better than any amp that I've used over the years!"

MACKIE.

For more information contact:
AUSTRALIAN AUDIO SUPPLIES • TEL (043) 291 711 • FAX (043) 291 747

Australian Audio
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PreSonus
Audio Electronics

NEW

Groove Tubes Mic

Groove Tubes introduce the **5SC** (class-A FET) **condensor cardioid mic** for recording

The 5SC employs a high sensitivity, large diameters (over 25mm) capsule design which is hand tooled from brass and precision lapped to exact tolerances.

The 5SC capsules are guaranteed to be matched within 1.5dB to each other so stereo pairs are readily available. The design is reminiscent of, but not an exact copy of, the classic European capsules of the 1960s they say.

The condensor preamplifier uses a class A FET type amplifier in a special low noise wide frequency bandwidth design.

Package includes a custom shock suspension mount.

• \$749 inc. tax.

• Contact: **Audio Visual Design**, T 02 9281 2444

~ REVIEW ~

NEW GAFF: AND IT STICKS

US Gaffa was tried here some years ago, I recall rejecting it in favour of dependable Nashua Gaff. US Gaff is back now, and much better. A brief test in the Connections bunker reveals the US Gaffa people have reformulated the stuff so it sticks just like the real thing.

It comes in 40 metre, 20 metre and 10 metre rolls, shrink wrapped which would be a hassle except it has an easy tear-off for the wrapper. So the rolls don't stick together. I remember my Nashua fusing together in the packer during Summer if the silly roll dividers were missing.

It passed the Tear Test from both sides, and doesn't have any appreciable stretch.

We tried the hot/cold stick routine and couldn't get US Gaff to leave a residue. It held fast even when we wrapped the muffler on Marvin the sickeningly green

Mini (proud conveyance of Nicole our office manager). It resisted water and seemed ready to hang onto the muffler indefinitely. Up in the freezer cabinet of The Office Fridge it happily held a tensioned metal fold back clip open.

Finally we chased Kelly (the Koala around the office before



rendering her useful, as our picture shows. Test successful!

So there you go. Now it's gaff wars, as Australasian Music Supplies (AMS) sign up retail outlets across the region. Isn't competition a wondrous thing?

• Dial (03) 9878-6699.

The editor seeks feedback on all reviews published. Call Julius Grafton on 1-800-635-514 with your comments.

MACH ROAD SERIES

Mach SPEAKERS

Mach speaker systems have been developed to meet the rigours of night club and live venue installations as well as having a multitude of general music and installation uses.

All cabinets have flying or hanging facilities, trapezoidal for arraying purposes and are internally steel framed for strength. Designed and built in Denmark to the highest specifications, Mach speakers carry a five year warranty.

MACH INSTALLATION SERIES



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MACH BACKGROUND SERIES



Write in Reader Service Number: 155

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Write in Reader Service Number: 141

NEW

Sony entry level VTR



Sony have released an entry level DVCAM editing and replay VTR machine. It is a digital format recorder/player that has been added to Sony's professional DVCAM line-up with application for educational, corporate and event videographers.

The DSR-30P records in the new DVCAM format, a professional extension of the consumer DV system. It adopts a wider track pitch and faster tape speed for higher quality, reliable professional applications, and both mini and standard sizes consumer DV recorded cassette playback in the unit. A built in tray allows insert editing, with a LANC interface providing remote controllability and the "Freewire" DV In/Out inter-

face. Other features include:

- The DSR-30P provides a DV In/Out, video/audio and data dubbing capability;

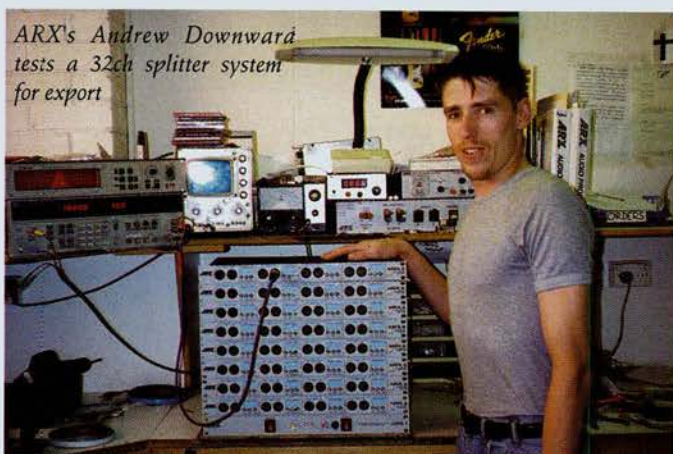
- The user also has choice of either 32kHz/12-bit or 48kHz/16-bit stereo audio;

- The DSR-30P can also read date and photo information recorded by a DSR-200P camcorder;

- The unit is equipped with automatic replay tools for Power on Playback, Auto Repeat, and One Program segment playback, external timer recording, index/photo/date search, and duplication with original time code.

- \$5800 + tax.

- Contact: **Sony Broadcast and Professional,**
T 02 9887 6666



ARX's Andrew Downward tests a 32ch splitter system for export

South Africa Buys Australian Splitters

ARX's South African distributor The Audio Distribution Company (Johannesburg) has recently supplied two complete MSX 4 Mic Splitter Systems. The first went into a Johannesburg based Rental Company and consisted

of 40 channels of MSX 4T Transformer Coupled Microphone Splitters. The second system of 32 channels of MSX 4E Electronically coupled microphone Splitters was delivered to a Cape Town based Rental Company.

TOOL TIME

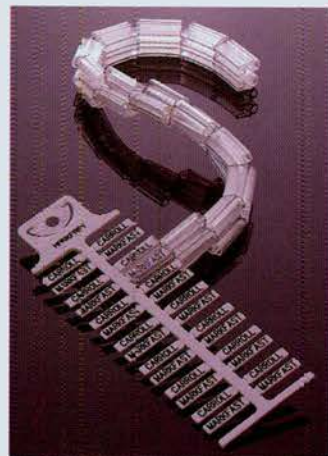
Cable Tags and Markers

Carroll Australasia have introduced a new cable marking system called Markfast.

Designed to permanently mark cables, wires, relays, contractors, terminations and large multicore cables, Markfast employ indelibly etched, dual tagged trees that are matched to dual transparent sleeves for quick and concise loading for wire insertion.

A built in paper clip is moulded into the header of the tag for attachment to marking schedules or schematics.

Cable marker tags and labels are supplied pre-marked and it works this way: the user supplies their marking schedules on schematic, spreadsheet, disc, handwritten list or datafile via



modern: and in most cases are delivered F.I.S., overnight Australia wide ready to install.

- Contact:
Carroll Australasia,
T 1800 777 456



Continuous Tie Cable Tie Gun

The 'Kwik-Tie' cable tie gun is designed specifically for cable installation and general purpose building requirements. It automatically dispenses as many as 200 custom fastenings per kit via its 15m belt and lip cartridge, using the exact length of tie for each application. This eliminates waste, offcuts and sharp ends on the tie. Instead of carrying multiple cable tie sizes, multiple wraps of the Kwik-Tie. The clips double cam locking feature gives increased shear strength thus minimising tie failure and clips are reusable. The Kwik-Tie is simple, quick and cost effective

to use and according to distributors, tests by users has demonstrated that the time taken to perform tasks can be halved.

Applications include tying cable, bundling and fastening, binding meshes, fastening duct hoses, plants and horticulture, binding bags and packages. Every Kwik-Tie comes with a Belt Pack and 200 clips for immediate use.

- An introductory Offer at \$89 per k.t including a free extra 15m valued at \$21.95. Accessories are also available.

- Contact:
Maintenance Products,
T 1800 622 630

road tested



Introducing the CA18 power amplifier from Crest Audio

Crest products are born for life on the road. Back in 1979, we began making amplifiers specifically designed for the demands of touring concert sound. Today, Crest amplifiers and mixing consoles are the first choice of leading concert sound rental companies. Now, Crest adds the all-new, 5000-watt* CA18 to its acclaimed CA Series.

This established line of affordable amplifiers delivers superb, undistorted sound consistently - even into 2 ohm loads - thanks to Crest's legendary "overbuilt" power supply.

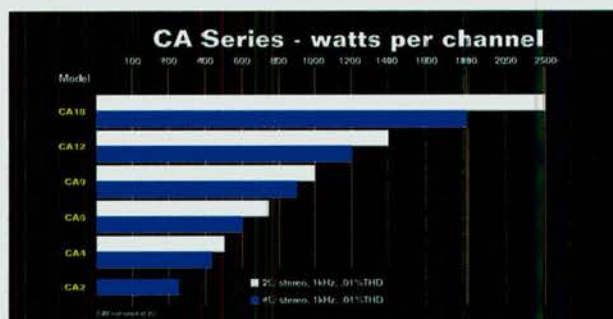
CA's keep their cool with the industry's most effective thermal management system, and provide fail-safe operation with Crest's unique TourClass® protection circuits. Every amplifier is subjected to the most rigorous quality control and testing procedures.

To top it all off, all CA amplifiers come with a five year warranty at no extra charge.

Call for your copy of the complete CA story.

Crest Amplifiers: the road tested choice of touring professionals worldwide.

*Power at 4 ohms bridge, 1kHz, 0.01% THD+N.



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JBL Expands EON Range

JBL Professional has expanded its EON portable PA Series with the introduction of the JBL EON 15PAK designed specifically for small keyboard based combos, the largest segment of the MI market.

The 15PAK (Public Address and Keyboard) provides a built-in three channel mixer, two instrument inputs and a microphone input with individual level controls and a global four-band EQ for custom sound tailoring. An effects loop, headphone jack and line output for direct connection to a mixing console is also included.

Rather than a single amplifier and passive crossover network, the 15PAK is internally bi-amped with a discrete 130 watt amp for its 15-inch woofer and a 50 watt amp for its high frequency horn and driver, ensuring a more effective use of amplifier power that reduces distortion and allows higher monitor levels on stage.

The system is unique as it features a compression driver with a pure titanium diaphragm which provides higher output and extended high frequency response. Neodymium magnets and JBL's Differential Drive™ motor structure also reduces weight without compromising its thermal capability.

The EON series' new 15PAK is housed in a rugged, light weight angled enclosure which allows it to be tilted back to a monitor position without additional stands or hardware.



A microphone and all necessary cables are provided with the system.

• \$2095 inc. tax • Contact:

Jands Electronics, T 02 9582 0909

Ashly VCA controller

Ashly Audio has added several new products to its lineup including new EQs, compressor/limiters and a VCA controller.

The MQX series of graphic equalisers offers a cost effective alternative to Ashly's GQX series. The three model lineup includes the MQX-1310 mono 31-band EQ, MQX-2150 stereo 15-band EQ and the MQX-2310 stereo 31-band EQ. All MQX series feature short throw faders; Balanced XLR, 1/4" and Barrier Strip inputs; selectable 15dB or 6dB range; switchable low cut filter and "Q".

The CLX-51 mono and CLX-52 stereo compressor/limiters replaces the Ashly CL-52E. Based on the same circuit design the CLX series claims to deliver lower levels of noise and distortion than its predecessor and a "threshold" control has been added.

A unique audio product released by Ashly

is the VCX-80 8-channel VCA controller (pictured). This product will control any line level audio signal accessible through standard audio jacks. All 8 levels as well as the master are digitally controlled while levels can be controlled over a wide range from +20dB to -75dB. Each VCA also has a built-in limiter for additional automatic level control. Dual 1/4" input and output jacks are standard which can be switched to a single send/return configuration for connecting to any type of existing audio equipment. With the addition of the VCX-80R remote panel, the VCX-80 becomes a compact and simple to use system. The VCX-80 can also be controlled via AMX or RS-232/-422.

• MQX Series - \$1150; CLX Range - \$1065; VCX-80R - \$ T.B.A.

• Contact: **Production Audio Services**, T 03 9414 1585



Write in Reader Service Number: 162

NEW

COMPACT EAW

The new LA212 is a two-way, full range loudspeaker incorporating a 12" woofer in a vented enclosure. It also features a large diaphragm 2" exit compression driver coupled to a proprietary waveguide. It will provide long term sound pressure levels of 120dB, says EAW.

The LA212 is suited for both stage monitor and small to medium PA applications. It is packaged in a unique asymmetrical enclosure that can be positioned horizontally as a low profile stage monitor as well as vertically stacked and or vertically stand mounted for PA applications.

The LA series now includes the LA325 Dual 15" 30-way, LA215 15" 2-way, LA212 as well as the LA128 2x18" and LA118 18" subs.

• LA 212 \$2995 inc. tax.
• Contact: **Production Audio Services**, T 03 9415 1585

New Equalisers for Symetrix

New to the Symetrix range is the 551E 5-Band Parametric EQ and the 531E and 532E 1/3 octave equalisers.

The 551E features 5 identical overlapping parametric EQ bands which means that any band can be assigned to any part of the audio spectrum. The 531E and 532E are 2RU high, Constant Q, 1/3 octave equalisers. The 531E

is a single channel model with long throw sliders while the 532E provides two individual channels in a compact chassis. Both models include variable high and low cut filters and feature good noise and performance specifications. The centre detent position on each slider serves as an on/off switch that completely removes that band from the audio signal

path. Symetrix say their proprietary filter technology delivers the lowest noise floor of any graphic EQ in the world(!)

All three Symetrix EQ's include internal power supplies, all steel chassis's and gold plated XLRs • 551E \$1031; 531E \$1220 532E \$1472. RRP inc. tax.

• Call: **Audio Telex Communications**, T 02 9647 1411

63 AFFORDABLE UHF CHANNELS



Finally there's a quality UHF wireless microphone system, at a reasonable price.

The heart of our new system is the 411UDR, PLL synthesized, dual conversion superheterodyne, true diversity UHF receiver, with 63 user-selectable channels, balanced and unbalanced XLR and 1/4" outputs, tone squelch, output volume control, status LEDs and an optional rack mount kit. The 41HT handheld and the 41BT bodypack transmitters are frequency agile and utilize surface-mount technology for superior reliability. Azden redefines the parameters by which cost effective high-band wireless will be judged. **41BT Tie-pin Mic System - R.R.P. \$1150.00 inc. tax, 41HT Hand-held System - R.R.P. \$1250.00 inc. tax.**



CHARGE IT! The 41HT handheld can be used with either 2 AA alkaline, or, our exclusive rechargeable NiCad battery, and you can charge it with our optional (AMC-2A) charging station.

AZDEN

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CHANGING ALL THE RULES, AGAIN



In 1979, Meyer Sound revolutionized the sound reinforcement industry with the trapezoidal cabinet and electronically controlled speakers.

Today, we're dramatically transforming loudspeakers again with the Self-Powered Series.

The Meyer Sound Self-Powered Series integrates the amplifier and control electronics within the speaker cabinet. From the amp to the horn, the innovative components of the Self-Powered Series were uniquely designed to optimize the performance of this breakthrough system.

REAL-WORLD BENEFITS:



Better. The impressive technical achievements of the system result in a better sounding, better performing loudspeaker delivering studio monitor quality with even the largest reinforcement systems.

Faster. Setup time is remarkably faster and the associated costs lowered. Amp racks have been eliminated and the need to keep track of matched racks and cable assemblies. The system requires surprisingly less truck space and shipping expenses.

Reliable. The Self-Powered Series holds one of the lowest amp failure rates in the industry. With known load characteristics, the amplifier protection is minimized, simplifying the signal path.

Consistent. Cross-compatibility in rental inventories from various companies is effortless since gain differences and connector incompatibilities are eliminated.

Versatile. With no shared processors, each loudspeaker's levels, frequency response and delay times can be individually manipulated.

"The self-powered speakers mark a new beginning for both Meyer and the live sound industry."

—Mix Magazine, August, 1996

A FEW SELF-POWERED SERIES USERS:



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k.d. lang
The Knitting Factory, NY
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Luis Miguel
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and U.S. Tour
Royal Swedish Ballet
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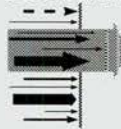


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Write in Reader Service Number: 185



UHF prices tumble

UHF wireless is to wireless PA what digital mobile phones are like when compared to analogue. Confused?

In a general sense digital phones sound better and drop out less, which is what UHF wireless does too. Until very recently the price differential between VHF wireless and UHF wireless has been astronomical and beyond comprehension, probably due to just a few players in the market.

Then the VHF market grew and new players were added to the degree there are over 50 manufacturers represented

in Australia. Now, UHF prices have taken a tumble.

AZDEN offer the A41BT system (the receiver is pictured) for \$1250 retail with a handheld microphone - less for a lavalier microphone.

The receiver is crystal controlled and PLL synthesized, and has 63 selectable channels in the 794 - 806MHz band, but users need to get info from the Spectrum Management Agency as to which frequencies they should use in their area.

• Call **CMC Music**, (02) 9905-2511.

More Options in Digital Recording

Part of the modular Korg SoundLink Digital Recording System (DRS) the SoundLink DRS 1212 I/O PCI Multi-Channel Audio Interface card, working in conjunction with Macromedia's Deck II Software, brings multi-channel computer-based digital recording at a new price point.

The SoundLink DRS 1212 I/O PCI Multi-Channel Audio Interface card provides 12-inputs and 12-outputs configured as a pair of analog I/Os, an S/PDIF I/O and an eight-channel ADAT optical I/O. All can be used simultaneously for maximum interface flexibility, ranging from simple stereo analog to full multi-channel operations.

Fully synchronisable, the SoundLink DRS1212 I/O PCI Multi-Channel Audio Interface card is equipped with a Word Clock input and output as well as an input for ADAT time code.

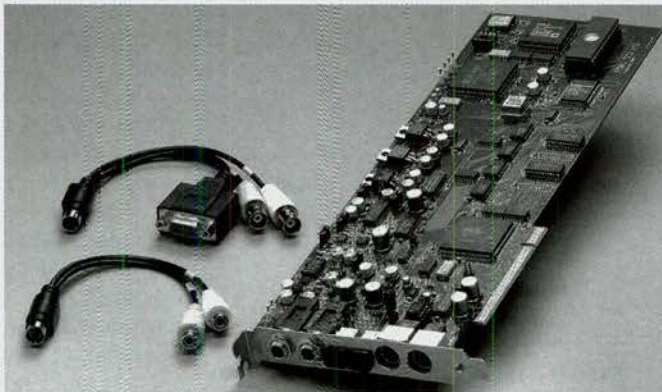
Deck II, from Macromedia, is a software package specifically designed for digital audio applications. Featuring full-function multi-channel digital recording, cut-and-paste editing, and supporting Quick Time video with synchro-

nised audio/video scrubbing, Deck II is a comprehensive audio software package. It is now combined with the new SoundLink DRS 1212 I/O PCI Multi-Channel Audio Interface card.

The SoundLink DRS 1212 I/O PCI Multi-Channel Audio Interface card is also compatible with the new SoundLink DRS 880 A/D audio interface, an eight-channel analog-to-ADAT optical interface used to expand the analog inputs of the SoundLink DRS 168RC Digital Recording Console or the SoundLink DRS 1212 I/Os. The SoundLink DRS 880 A/D audio interface has eight balanced analog inputs, two with mic pre-amps.

• DRS 1212: \$1990 inc. tax.

• Contact: **MusicLink**,
T 03 94 299 299



Fostex[®] PROFESSIONAL HEADPHONES



T20RP & T40RP

A FAVOURITE AMONG TOP MUSICIANS AND STUDIOS, FOSTEX RP HEADPHONES ARE A STANDARD IN THE PROFESSIONAL RECORDING WORLD.

FEATURES:

The T20RP/T40RP are professional stereo headphones with RP technology, (regular phase), originally developed by FOSTEX. The T20RP/T40RP are the standard headphones for all recording applications.



T-5 & T-7

RETAINING REGULAR PHASE TECHNOLOGY THE T-5 & T-7 ARE DESIGNED TO COMPLEMENT THE T20RP/T40RP RANGE WHILE OFFERING AN ECONOMICAL ALTERNATIVE FOR THE HOME STUDIO.

FEATURES

The T-5/T-7 employ regular phase technology as in the T20RP/T40RP range and retain the excellent tone balance and natural reproduction that Fostex have become famous for. The T-5/T-7 range retain strong yet lightweight materials enabling extensive use with low fatigue.

M-SERIES MICROPHONES

Featuring an affordable range of dynamic hand held and gooseneck microphones. Fostex, with extensive experience in professional microphone design, has developed the M-SERIES for both studio and live use.



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Write in Reader Service Number: 198



CVP Manager and Producer Kevin Lacey in the Switch Room.

Centre Video Production

BY IAN COLE

The Sydney Exhibition and Convention Centre has launched its new television broadcast and video edit facility called Centre Video Production (CVP). This will provide the centre with a can-do answer to the many and diverse audio vision requirements of clients as well as introducing a new high-end vision ready facility into the market.

The new edit suite and control room have been designed and equipped to provide a range of audio vision based services, from simple image/format transfers to fully produced concept video productions or four camera outside international broadcasts. The well equipped master control room can route signal to any venue, room in the Centre and microwave data transmission is also possible within 'line of sight' to The Centre.

'Looking at the new facility, quite frankly makes me wonder what we did before,' said Mr Ton van Amerongen general manager of The Centre after the launch of the facility.

Whilst the Darling Harbour Convention and Exhibition Centre has always provided audio visual support to its clients and exhibitors, the Centre's administrators concede that its A/V capacity has needed upgrading compounded by exhibitor's raised expectations of audio visual support. According to CVP Manager and Producer Kevin Lacey the plans for the edit suite were developed with a range of uses in mind, as he says, to make it 'as comprehensive as possible'. Once the wish list was devised the Centre commissioned technician and system adviser Kevin Mooy for the installation. One look at the back panels in the patch equipment room displays a fine attention to detail and thorough working: it's very neat.

The core of facility are the On-line and

Off-line Edit Suites and Switch Room with a variety of transportable satellite gear which can turn any space in the Exhibition Centre into a broadcast recording area. The Centre is now comprehensively laced with both copper and fibre optic cabling which also increases the range of audio visual services available — and it all works: Kevin Lacey said CVP has already produced audio/video material, in a sense 'road-testing' the facility. One project was for ABC Marketing, quite a coup considering that ABC would usually produce their material in-house at any number of their facilities. The Centre management also needed a promotional video with a week turnaround from nothing to something which required documenting the current water/laser feature. Lacey said,

'This was a real challenge because the event/feature runs at night so we used a Thompson 16x9 camera with available light and the results were very good.'

The CVP facility is not just for the sole use of The Centre: CVP is out in the market and offers a competitive rate for outside productions. Project rates are POA according to Kevin Lacey.

'As the facility gets going it will be available for outside expressions of interest,' said the Centre's Technical Service Manager Al Craig, 'The new studio makes it the only diverse broadcast facility near the city. It is in a unique spot: next to the harbour with The Centre's 24 hour facilities; catering and backup services — much more appealing than being stuck in a basement somewhere in North Sydney.'

• Further information:
Centre Video Production
T 02 9282 5000.

Pro AV: Perth's own show

Jacqueline Molloy reports from Perth

It's reassuring to see that tradeshows the world over have something in common; lolly and catalogue snatchers. On the first day of PROAV 97 in Perth WA, held in the exhibition centre at the showgrounds; a fantail thief was at large. After nicking all the fantails out of a complimentary bowl (he was thoughtful enough to leave the minties behind) he was last seen making a mad dash for the exit.

And of course there were the usual catalogue collectors who automatically take one of everything without ever actually reading what they are. Though the fact that you had to be 16yrs and over to get in may have saved a few trees (and exhibitors a few dollars) in this instance. I was most insulted when they didn't ask to see proof of ID at the registration desk!

In its third year, PROAV, a two day exhibition, is growing nicely according to its organisational committee of three; Rod Henderson, John Philp, and Mike Collins. Unlike other tradeshows, PROAV is not a money making venture for the organisers but an opportunity for them and the other exhibitors to show their products to the WA industry in an environment that encourages potential buyers to look and touch. As one exhibitor pointed out "it's not always easy to fully demonstrate a product from the back of a truck or in the office, assuming that you can even afford to keep it in stock."

There were around fifty exhibitors showing a wide range of products for broadcast engineering, post-production, lighting, sound and video and music production. On display was everything from custom built roadcases to a complete DVC Pro editing suite in a briefcase that was reminiscent of something Maxwell Smart would utilise. Several stands had striking flower arrangements (not some-

thing usually associated with tradeshows in our industry) that were used to demonstrate the colour accuracy of the new generation of digital video and to show off the new fluoro softlights.

I was told that this year lighting had a higher profile than in the past as did software, across all disciplines. And an industry tradeshow wouldn't be complete without a pyrotechnics display; choreographed to the music of *Carmina Burana*. PROAV also saw the debut of a slick looking web-site for one of the exhibitors, who was proudly handing out mugs with his web address emblazoned upon it.

Mel Congerton who has done the nuts and bolts organisation for PROAV for the three years it's been running, told me that all the floor space had been sold within two weeks. Last year there were around 600 people through the doors and it appeared on the first day that this years exhibition would also have a good turn out.

Since Perth is the most isolated city in the world it's often difficult to get the opportunity to view products other than by attending tradeshows overseas or in other states. And since it's frequently the boss who gets to travel and not those who may actually use the products in their daily work, this is often not satisfactory for the end user.

Rod Henderson pointed out that most companies in Perth are not in a position to actually keep stock of every product they distribute and PROAV gives them the opportunity to ship stock in and demonstrate it to potential clients. Henderson also said that he is pleased with the response from local industry in their support of PROAV and believes that it gives buyers the opportunity to be better informed when making purchase choices.

Staging Connections Wins Award

For the second successive year, Staging Connections has won the Meetings Industry Association's National Award for the Best Audiovisual/Production Management service.

This year's award was won by Staging Connections Melbourne.

Since 1990 the firm has won MIAA awards in all states of Australia.

The award reflects the quality of the work that Staging Connections has performed since it started with four employees in 1981. Today the company has more than 350 staff throughout Aus-

tralia.

In addition to its 10 state offices, Staging Connections operates the in-house audiovisual departments for 28 of Australia's leading hotels.

Staging Connections Marketing Director Ian Whitworth attributes the company's success to its customer service policy and the ability of its staff.

"The right technology is vital, but the real difference is in the people behind the scenes. It's the ability to make an entire event work effectively that keeps customers coming back", said Whitworth.

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PSC Fleximount - an all purpose jointed mounting device. Has 3/8" thread and removable sections.

Lectrcsonics UCR200b - portable 256 channel synthesised wireless radio mic system. Ext. 12v with UHF belt pack or hand held transmitter.

Zaxcom Deva - portable four channel mixer with built in hard disc recorder offering 2 or 4 track with timecode. Has 9 pin serial port and battery operation. Isn't this what you have been waiting for?

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This unit is fully balanced for clean connections, has an internal power supply for reliable power without the wall wart, and knobs that click at each setting for accurately reproducible settings.

One of the biggest problems with processing vocals are those pesky "sssssss" sounds. Our dbx de-essers are in use in virtually every major recording studio in the world. The 286A's de-esser (yet another patented dbx circuit) gives you a frequency control so you can pick out exactly the range where the de-esser will do its thing and a threshold control so you can control the amount of de-essing that will occur. Because of the unique design of this circuit the de-esser monitors the amount of signal coming in and adjusts itself so you don't have to constantly change the settings for different volume levels.

The compressor in the 286A is a patented hybrid feed-forward/feed-back design that was engineered by a guy named Bob Orban. (His stuff is used on almost every radio station on the face of the planet). Using the classic dbx VCA (the heart and soul of a compressor) the 286A compressor is very easy to use with its drive and density controls. Drive is the amount of signal sent into the compressor and the Density is a combination of controls that allow you to achieve anything from a nice transparent gain reduction all the way to a fat squashy compression so popular on heavy rock vocals. The 8 stage LED meter gives you a great visual indication of how much the compressor is working on your vocals or whatever else you may run through your 286A. Now's actually a good time to tell you that you're not stuck just using the 286A as a mic pre, it's got a line input so you can use the 286A's 5 processors on any of your audio: guitars, keyboards, drums - anything!

Another very cool device in the 286A is the Enhancer. The low frequency detail is a very trick circuit that not only adds warm low end but fattens up the signal by cutting out some of the mud in the lower mid-band at the same time! The HF (high frequency) detail adds sparkle to your signal. Now if you're thinking that the sparkle that you add with the Enhancer is going to put back the high frequency sibilance the de-esser is taking out, think again. The two circuits are tied together in an ingenious (and patented) way such that they work in tandem to do both jobs beautifully!

Oh... and a GREAT Mic Pre

The 286A utilizes a precision laser trimmed ultra low noise (0.95 nV/√Hz) circuit that translates to an Equivalent Input Noise spec of -128dBu and an extremely wide bandwidth of >200kHz. All this engineering jargon translates to a gorgeous mic pre-amp circuit that you can count on to sound warm, transparent and accurate. With a precise 48 volt phantom power supply built in, you can count on the 286A to work with all your professional standard microphones.

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local dbx dealer today for a test drive of all the processors in the dbx 286A or call us for more information.

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Write in Reader Service Number: 116

QSC Power Light 1.8 amplifier

By Julius Grafton

After I'd purchased my 100'th amplifier I decided to get scientific and appraise new models via a bench test. Some weeks later and after a lot of time and money, I realised the printed specification meant almost nothing, because the amp with the worst numbers ended up the best for me. It was the famous old ZPE 1000 (RIP), as agricultural a piece of machinery as you'd ever find. They served us well.

So when I had a beer with some readers after the PA Crescendo at ENTECH in Melbourne, talk turned to amplifiers - and light ones at that. One guy was emphatic: switchmode power supplies mean no bass. The other guy had heard a QSC PowerLight in action and didn't agree at all. All three of us agreed that if an amp which weighs 8kg actually works properly then we would all embrace it. I still figured weight equalled performance. Then we bought some more Melbourne Bitter and started talking about ethernet and audio and football and sheilas and.....

The next night the Power Light 1.8 won the Most Popular Amplifier award at the ENTECH Awards.

WHY POWER LIGHT 1.8?

Matthew Kline from AV Sound is a pragmatic user of audio. He turned to QSC some 18 months ago and now owns more than 100 MX 1500a amps. Recently he bought a collection of Power Light models which went into touring hire, to prove the type as worthy.

His company AV Sound have almost 40 permanent installation hires, do driveway hire, and installation sales from their HQ in Sydney. The installations are hard on amplifiers as the ambient temperature and humidity are high.

Knowing this, AV Sound are well placed to discuss the attributes and bad habits of amplifiers, which is exactly why I was there.

OVERVIEW

The PowerLight 1.8 is a 2 rack unit tall bi-polar power amplifier with switch mode power supply for ultra low weight. The chassis is steel, and although it can be flexed when the lid is removed, it is adequate considering the low weight of the unit. Rear mounting steel rack ears are provided.

One 'tunnel' heatsink runs through the unit, dual back to back fans at the rear of the unit draws air through with hot air expelled from the front of the amp. Provided the air input is kept clear of fluff and debris, the amp works under all known conditions, reports Matthew.



FEATURES

Power Light has the things you expect - de-cent volume controls on the front, and four LEDs show signal present through to clip. The back panel has Neutrik combo connectors for either XLR or 6.5mm jack inputs, along with barrier screw terminals for those times you do an installation and feel too cheap to buy two connectors. The XLR inputs are wired pin 2 hot.

Speaker outputs happen on 'touch proof' terminal strips, just as well, because a high power amp can give you a healthy 70 - 80 volts up the digit if you grab hold whilst things are happening.

The stereo - bridging - parallel input switch is joined by a remote AC control terminal.

More recent models of the Power Light range than the one I saw at Matthew's place have a 9 pin 'data port' as well, for remote control and monitoring. They also now come with a user defeatable (switchable at the front panel) clip limiter. I can see some users setting the limiter and then filling the hole to prevent the limiter being un-set!

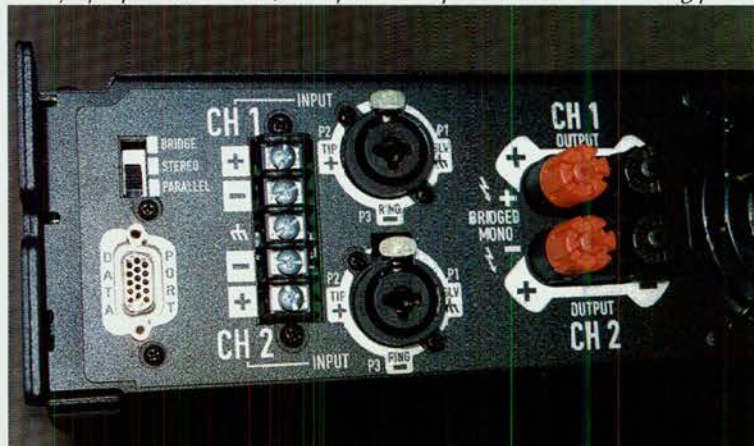
Interface is a big issue, in AV Sound's case they plan to interface future Power Light amps with Peavey's Media Matrix control and processing system. Another interface possibility is a pair of QSC devices, the NSC-8 is an analogue audio 'signal

controller' at the inputs, and the LM-8 is a 'load monitor' for speaker outputs. Both supply matrix type load and signal routing along with extensive system protection options.

THE SOUND

So far as Matthew and his team are concerned, PowerLight delivers the goods in an aural sense, and in particular the bass response - provided a large enough model is used. Which is the same

Plenty of input connections, but speaker outputs restricted to binding posts



QSC Power Light 1.8

(continued)

reality you apply to any amp.

Any amplifier choice is preferably accompanied by an audition, preferably with a source and speaker system you know in an environment you are familiar with.

"There ARE amps that sound bad", says Dave Coxon from AV Sound. "And you'll never get a customer telling you the amp sounds good, but they will tell you if a system sounds bad".

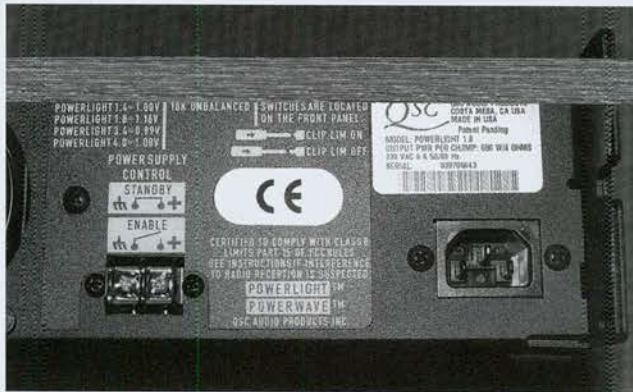
POWER

The rated power is quoted at 650 watts at 4 ohms, 20Hz to 20kHz response, with total harmonic distortion (THD) 0.1%. The amp will run a 2 ohm load according to Matthew, and thus is rated at 900 watts - but according to the specifications this is at 1kHz and at 1% THD. 2 ohm capability is thus available, but not beneficial, in my view.

Steve Bray at AR Audio Engineering (importers, distributors of QSC) says it's due to the 'stiffness' of the power supply, which is presumably fairly stiff at 4 ohms and fully aroused at 2.

But the amps do work at 2 ohms. AV Sound have torture tested Power Light at 1.5 ohms into clip both channels driven for 2 days.

10 amps mains supply for each 1.8 is a good provision, says David Coxon, and when they use the Power Light 4.0, they supply 16 amps of mains. But understand this is not what current the amps are



Out back there is plenty of info, and remote mains switching as well.

actually pulling.

With switch mode power supply, the current draw is drawn direct off the mains, whereas a conventional amp which has a huge transformer and large capacitors on hand to give the rails reserve power.

CONCLUSION

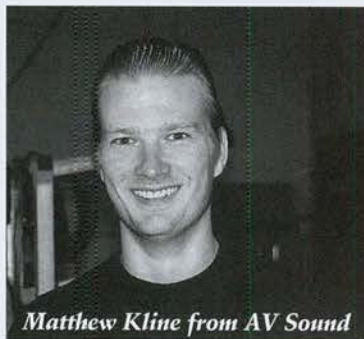
A lot of the negative market buzz about Power Light and switchmode power supplies in general is just plain wrong.

The 1.8 delivers, although the

question of specification and rated power are not addressed in this review. Rather, this review is about real world usage, where AV Sound chose a brand and a type for a raft of reasons.

The 9 pin data port is more a 'tomorrow' thing, although QSC have a history of 'smart' control technology (they were close to the failed Lone Wolf Media Link experience, for example), the common daily control link is still usually a proprietary system. People like AV Sound will find ways to connect things together.

The verdict on Power Light 1.8? David Coxon: "they are pretty much bulletproof". Matthew Kline: "We've had a wide range of amps, but for price and reliability, this amp eats it".



Matthew Kline from AV Sound

- Price: retails at A\$3,395 including sales tax.
- Manufactured by: QSC, call +1 714 754-6175
- Australian Distributor: AR Audio Engineering, call +61 2 9810-5300.
- NZ Distributor: Jands NZ, +64 9 366-7021
- Good people to know: AV Sound, (Sydney) call +61 2 9948-2644.

Editor invites feedback on reviews, products, and review format.

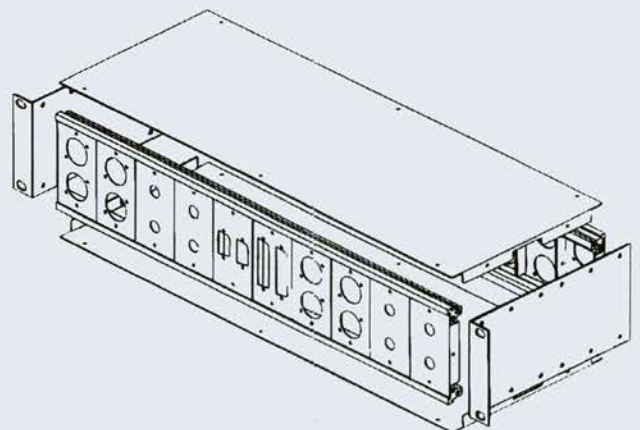
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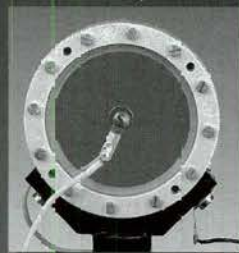
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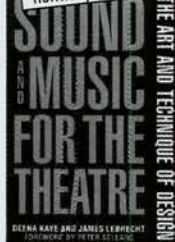
By Graham Walne.

Written in non-technical language and lavishly illustrated, this book gives a brief historical overview of early projection attempts, then goes on to look at equipment and the planning and design of every kind of live performance, both inside and outdoors. 139 pages, 1995.

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Sound & Music for Theatre

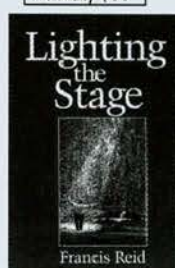
By Kaye & LeBrecht.

This book is for anyone interested in creative sound and traces the complete process of sound design from the original concept through to the finished plan. It covers development, research, cues, recording and various techniques. Also included is a director's and playwright's forum where they express their views on sound, design and its impact in today's theatre. 196 pgs, 1992.

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Lighting The Stage

Written in an informal style, Francis Reid draws on his many years experience as a world renowned lighting designer and teacher to pass on tips and pointers which will interest and stimulate all those concerned with using designed light on stage. Ideal for directors, choreographers, set designers, costume designers, stage managers and specialist technicians. 114 pages, 1995.

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Sound Reinforcement Handbook

Written for Yamaha by Gary Davis & Ralph Jones, this handbook provides a useful reference for those wishing to learn about the basics of sound reinforcement. Presented in an easy-to-read format with clear diagrams and an index, this manual is a must for anyone working to bring better sound and music to the world. 412 pages, 1989.

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Music Business

By Shane Simpson & Colin Seeger.

A book about the business side of the Australian music industry by two top industry lawyers and deal makers. Shows how and why things are done as they are in the industry & what to watch out for in negotiating deals. A comprehensive guide for both the novice and the industry professional. 496 pgs, 1994.

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Concert Lighting

By James Moody.

This hardcover informative book places special emphasis on rock and roll concert lighting equipment and techniques. Of particular interest for the touring professional lighting technician and designer it covers every aspect including the design stage, cuing the music, road safety, equipment designed to travel and practical examples of techniques. 191 pgs, 1989.

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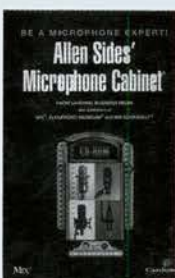
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Sony DPS V-77 Multi Effector

By Dan Cole



Multiple Effects ~ Multiple Choices

It can be difficult sometimes for busy audio practitioners to keep track of new equipment or processors coming onto the market — understandable as the market is rather 'busy', however one product warrants a closer look: The Sony DPS-V77 Multi-Effect Processor. The DPS-V77 has been on the market for a while now: It's a multi-effects processor that aims to replace four 'conventional' effect units and at the same time providing current digital technology at a low price point, under the \$3K mark. Sounds like a big ask yet Sony have achieved these aims in this unit.

To seek out info on this device I visited Paul Bryant Mastering, in Silverwater (Sydney) and spoke with Paul.

Features

The DPS-V77 utilises a 24-bit, 64-power oversampling A/D-D/A converter with a 20-bit resolution pulse D/A converter and the unit has a 52-bit Digital Sound Processor onboard enabling powerful stereo processing. The theory being the larger the bit rate the more comprehensive the effect algorithms: with 'smoother' bit-curves more 'realistic' or detailed effect textures are possible. In comparison, for instance, a 16-bit reverb may have a

'grainy sound' according to some tuned listeners. Having a 52-bit effects processor is also handy in a digitally orientated studio work space because the DPS-V77 is directly compatible with any high-bit Digital Audio Workstation using the AES/EBU standards.

Paul Bryant said,

'...the algorithms are smoother and cleaner. My work station is 56-bit so using the DPS means I can keep everything in the digital domain.'

Effect Choices

The DPS-V77 has two banks of 99-preset memories (198 in total) with room for another 198 custom settings and, as expected, the unit offers a wide range of effect banks plus a few other useful surprises. Some bank-effects include: sampling (including reverse sample function); 5-sound effects including vocoder, ring modulator, dynamic exciter; 3-types of panning; 11-types of delays; 6-types of reverbs and 7-types of filters.

V77 has dual Digital Sound Processors which enables concurrent effects processing. This means that two effects can be chosen and run in parallel or side-chained so they receive the same input signal then split to

(continued over)

And then there were three....

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03D
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Sony DPS-V77

(continued)

separate outputs, or linearly, one after the other. In this instance an effect will receive the output from the first nominated effect as its input.

Stereo DSPs also makes it possible to fade between effects using what Sony call a new Combination Algorithm. If the Morphing Function is selected, it is possible to crossfade between two effects such as reverbs, delays or compressors. The duration of the fade can be controlled up to 10-seconds and the curve-ratio can change also. This allows one effect to fade out — and still be heard — whilst the other fades in quickly. This function can be triggered externally by one of two foot pedals or via MIDI.

It is not possible to further split each DSP for more sound shaping possibilities however there is a dedicated EQ engine on each DSP allowing three types of either pre- or post equalisation on nominated effects.

Paul Bryant said,

'Each effect engine has a comprehensive EQ which is good too — it is either pre- or post, and you have a choice of shelving, parametric or roll-offs.'

Another new effect algorithm is called Spacious Ambience which is basically an auto-pan feature. It controls both left, right and forward/backward dimensions of a sound field and this effect enables the user to 'place' sounds or instruments within a '3-dimensional' sound field.

Other presets worth noting include the frame and field delays. This has made the DPS-V77 popular for TV/Video applications and post-houses where video switchers can un-sync an audio track from an accompanying image. The frame and field delays can be used to compensate for this annoying problem across all formats such as NTSC/PAL/SCM. Normally a dedicated unit is used for this job so the Sony DPS-V77 is a pragmatic (and cheaper) option here.

The amplifier simulator algorithm is neat too. With this effect it is possible to change the position of a 'virtual mic' in relation to a 'virtual amp' and 'virtual speaker cone', this would be handy for extra signal shaping or for overdrive-style processing.

Look and Feel

Navigating through the V77's features is straightforward. There is a compact LCD display which is easy to read, considering that the unit is 1U rack high and parameter layers are manipulated through 8-function buttons directly under the display window. There is also a numerical key pad for direct input of memories/parameter settings which saves time when in the flow of a mix. A rotary-style wheel (encoder) is also available for quick memory or parameter changes. Generally, effect parameters can be changed and varied significantly in a clear and logical manner. Paul Bryant added,

'The layout is good and clear and setting parameters is easy using the dedicated keys. It's really simple provided that you get used to the fact that there are pages in the menu. It will power up in the same setting last used. Its got 198 user memories which is basically how I use it — I have now fifteen various multi-layered parameters which are tailored to my requirements as a masterer.' One other handy feature is a 'empty-full' style indicator that indicates how much DSP headroom is still available. This is useful when adjusting parameters as it gives the user an idea of whether the potential (or processing power) of an effect has either under utilised or the options-limit has been reached — and it's now time to make a decision!

External

The input stage of the DPS-V77 can simultaneously accept analogue and digital inputs, as well, input stages can accept both +4dB and -20dB environments. The unit can 'dialogue' digitally with most external devices via a digital I/O however the user has to purchase one of two digital interface cables to do this: one for the AES/EBU standard and another for SPDIF. For those with soldering skills the pin-outs for the digital I/O connector are given in the owners manual. The back-plate has one pair of XLR connectors for input and output and pair of 1/4" also on input and outputs.

Conclusion

The DPS-V77 design rolls four units into one combining many features from the earlier DPS range with a selection of new functions. This has produced a powerful processor but obviously some of the power of the individual units have had to be limited to make it all fit into one unit. Although it wasn't possible to combine effects with the previous range, it was possible to run them off an optional Sony remote. This model remote has been discontinued and will not drive the DPS-V77 and a new remote is available instead.

The DPS-V77 comes in at under \$3K which has made it a attractive device not only for pro-audio applications but also in post production houses. Paul Bryant puts it succinctly:

'It's an extremely competent device provides flexibility and quality. To get all that in the one device has to be one of the greatest bargains around.'

- Recommended retail A\$2916 including tax.
- Distributed by Sony Australia, T +61 2 9887 6666
- Sony Auckland, + 64 09 415 7777
- Sony Singapore, + 65 473 0300
- Good people: Paul Bryant Mastering, +61 2 9748-0222

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Out back, all you need. Input & output XLR's are balanced, and wired pin 2 hot as they should be.

EASY SOLUTIONS

The Concept

Optus Oval at Carlton will soon gain an additional grandstand, meanwhile a high quality sound system and scoreboard has been installed to cater for all seats in the 35,000 capacity outdoor venue.

Management at Carlton sought proposals. Bose® undertook to produce an acoustic study of the oval so that different configurations of sound equipment could be considered. Management were promised an active presentation and demonstration using Bose's new Auditorer® audio demonstration system.

Bose undertakes an Auditorer study at no cost for larger proposed sound system installations, and offer a money back guarantee if the resultant system sounds different to the Auditorer demonstration!



The Solution

Julie attempted every possible reconfiguration, but to no avail. She was forced to make the presentation to the club, and show them, using Auditorer, that there was a problem with the sound system location - and the scoreboard too.

Auditioner allows a listener to hear - through the playback system - how any source, voice, music or even a race call, will sound at any position in the venue.

Julie demonstrated to the venue management the attributes of the proposed sound system. She demonstrated the problem caused by the location of the system, and advised the scoreboard and system be moved. "It doesn't matter whose brand sound system you choose, the problem will not go away" she told them.

The Problem

Management wanted a new system with better intelligibility, to cater for the expanded audience. But houses nearby couldn't be exposed to any additional noise.

Bose sound system designer, Julie Hunter, surveyed the site, and obtained all the plans for existing stands and the proposed new stand. Dimensions and surface materials were entered into the Bose Modeler® software, to produce an acoustic 'wire frame' model in 3D of the entire oval.

The sound system was then designed.

Using Bose Auditorer audio demonstration technology, it was then possible to actually hear what the proposed system would sound like at various seats in the oval.

Julie Hunter discovered the proposed sound system would reflect (echo) off the glass club windows opposite the main loudspeaker cluster. In some seats the proposed sound system would not be intelligible. This also affected the location of the proposed scoreboard and presented a major challenge to find a solution.

The Installer

The PA People installed the system. It comprises 5 x Panaray® Long Throw speaker enclosures and 12 x Bose® 502BE bass enclosures, mounted at the scoreboard so people would localise to it. 10 x Bose® 402™ speakers are located on individual time delays to cover areas with no direct line of sight to the main system.

The system is controlled by a Crown IQ system, providing input through an SMX-6 mixer. The IQ also controls the Crown amplifiers, and monitors their performance. Interestingly the system was configured so accurately that no equalisation was required. The input to the system comes from audio sources at the ground announcer's booth, located on the opposite side of the oval.

The PA People have a national network. The local Melbourne branch provides after-sales service to Optus Oval.

Contact: Chris Dodds at The PA People, Sydney

The Result

Management accepted that the scoreboard be relocated, and with it the proposed sound system. The revised Auditorer demonstration proved that the reflections from the glass windows were now minimised. A proposed billboard around the top of a stand was now a potential problem. A simple solution was to tilt it upwards just 5°.

The proposed sound system was demonstrated to management using Auditorer. The quote was accepted.

Bose dealer The PA People designed the mechanical and electronic configuration of the system, and arranged installation.

Once commissioned, management were extremely impressed. Ground Manager Martin Shannon said: "It's sensational. If it wasn't spot on, we would have got our money back!"

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Mic'ing stringed instruments

Knowledge on the finer techniques of studio practice can make the difference between a great recording and a fizzer — no matter how much great gear's available. In ProTalk! studio practitioners generously offer their hard-earned knowledge available on a variety of studio topics for all to see. The reading is always informative and this month's topic is no exception: how do you deal with mic'ing up strings and pianos? What mics do you use and why? What should you watch out for and common pit-falls (whoops!). All are considered in this month's ProTalk!

Norman James McCourt from **C'est Ca Recording Studios** (VIC) was prompt in his reply and stated that 'you can never have enough expensive condensor mics, i.e., to soak up the 'air' in the room for brilliance, transience and frequency response. It is usually in this application [recording strings] that the difference can be heard between a \$3000 Nuemann and a \$1000 look-a-like. Also record in stereo preferably X-Y as MS does not always appear to give you a spacious enough image.'

Charing Cross Studios' Gordon Hervey in Sydney added, 'When mic'ing individual string instruments such as acoustic bass, a ribbon microphone about 1/2 metre from the bridge will produce a consistent bottom end response. Mixing in a condensor mic positioned higher will add brightness and ambience.'

The older ribbon microphones like an RCA44 or Tannoy have a broad directional response so it's important to find the best position in the room for the instruments. If mic'ing a string section let the players first find their own positions for an acoustic balance before considering mic placement. Providing semi-open headphones (such as Sennheisers) is a good idea. Upright chairs without arms will be popular too!

'Always use condensers' says **Greg Dixon** from **Aphex Recording Studios** in Eastwood (NSW), 'I have used dynamics for lo-fi effect but if you want to capture the true acoustic sound always use condensers. For more attack (a more aggressive sound) mic closer to the strings. For more warmth and accuracy move the mics further away. The most common trap or miscon-

ception is that the best place for a microphone on an acoustic guitar is in front of the soundhole — I continually have guitarists moving their positions after being mic'ed to put the soundhole in front of the mic. This will produce a 'boomy' low-mid heavy sound. The other big trap is out of phase mics in a stereo mic situation. Use that mono button to check the phase — when it sounds great in either mono & stereo you've got it right.

When mixing a string section for a rock/pop track no amount of microphone technique can make up for a poor arrangement!

Barrie Clissold from **Wombat Rd Studio** (VIC) contributes: 'For piano we have often used a pair of AKG C-1000s in the standard X-Y configuration placed a few metres above the piano and to the open lid side. However any good mic will do the job if the room acoustics are right. For upright pianos a couple of PZM mics hung inside with the lid open can also sound OK. This gives a bright 'rocky' sound!'

For guitars, banjos, mandolins etc we like the RODE NT-2 either singularly or a pair for stereo. They give a very bright open sound. For a warmer sound try an EV RE-20 or even a Shure 57. Our favourite method is to use the mid-side mic technique with a Neumann U-87 in figure-8 mode (or a RODE classic) and a RODE -NT2 or a CALREC for the mid signal aimed at the sound hole from about 1 metre away.

With any stringed instrument it pays not to get too close and you need a quiet & sensitive mic in a good acoustic environment to get a full natural sound. Most good quality condensor mics will do the job.'

David Hinds Recording Studios in Port Macquarie (NSW), said: 'When it comes to mic'ing string instruments I usually record acoustic guitar and occasionally violin. My usual mic choice for this job is an AKG C414 although I have had some success with a pair of (Dynamic) Sennheiser 441s in an X pattern. I like the 414 for its even frequency response, lack of boominess and its top-end clarity.'

With acoustic guitar I usually place the mic about 50cms from the guitar facing the point where the joins the body — this works particularly well for fingerstyle. I try to EQ as little as possible, maybe cutting mids a tad. A small amount of compression, a touch of 'verb and there you go — works for me.'

• Connections welcomes suggestions and contributions for ProTalk! Ring Dan Cole and we'll put you on our fax-stream.

• Error!

Last month's ProTalk! (on the subject of effect processors) cut off Norman James McCourt's contribution in mid sentence... We apologise for this technical snaf-foo. His full text:

Norman James McCourt from **C'est Ca Recording Services:** "Effects processors come and go but the good ones tend to stay such as Rev 1, SDE 3000, PCM 60/70.

However it would be nice if some of the manufacturers actually continued with software updates for their units beyond twelve months - as in the case of the AMS reverbs and delays.

Anyone buying these units 15 years ago has certainly got their moneys worth."

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Write in Reader Service Number 137

PowerMac 7300 with DOS card

Can a MAC and a PC co-exist in one body?

By Julius Grafton

This is a story about the state of the times.

The vast majority of Connections readers use computers in many ways - too many to list. We often debate the merits of the two platforms - Intel PC or MAC. We sadly have both.

Somehow I find we have 14 computers but just 8 staff. The need for redundancy at every step is part of this, because the only thing that stops us at Connections is a power outage. We use the Macs for publishing this magazine and for Internet browsing.

We use PC's for our database (Microsoft Access) and our accounting package (MYOB). We could get MYOB on Mac, but because we had decided on ACCESS when we started this business we knew we would have one PC in the office. So we decided it would run MYOB and ACCESS to utilise it properly. That PC was a 486 which was retired last year, and we now have 3 Pentium based PC's.

Our Network

All our computers occupy the same network wiring, which is basic coaxial Ethernet. Each computer is daisy chained to the next, which is not as elegant nor as safe as using a distributed hub system. If one connection is interrupted, the network is interrupted. But because we anticipate moving office next year we persist with a 'temporary' network cabling regime. It works.

Originally we had a Quadra 800 when it was the fastest Mac you could buy, and it was networked using Apple Talk on standard telephone cables with those little dongles you plug into the printer port. It was at first a miracle, every Mac was ready to network and it worked. But it was very slow.

Today everything is Ethernet ready. It's all fast enough, both at the PC and the Mac ends.

Our First PowerMac

Being somewhat conservative and wary we persisted with various Quadra based Macs and kept away from the Power Mac, which non Mac users will be impressed to learn is a different kind of Mac. The Power Mac prefers new software, although it is presented as capable of 'emulating' your old software, which is now quaintly referred to in the PR as 'non-native'.

When we bought our first Power Mac we knew we would also buy upgrades to all our software. So recently we did just that.

How not to buy a computer

In the interests of proving a long held theory, I have now exhausted three different methods of buying a computer.

First, I did a lot of hassling at the time of the first Mac Quadra purchase and found a small dedicated Mac outlet to whom I remained loyal for almost two years.

Once they realised I wasn't about to immediately buy Power Macs when the lease on the Quadras expired they dumped me, ever so discretely, into the Useless bin. This is where the office Junior is assigned to return your calls to the once helpful salesman.

A year later the Power Mac purchase was on so I thought I'd go the other route and just order the thing from a Mac mail order house. The twist was I wanted a PC card with extra RAM. They had a mail order house freakout because I also needed to buy Windows 95 to run on it. The mail order house saga eventually resolved, it was a mess, I moved to Mac Vendor # 3 for the final

Power Mac.

This time I asked around. I wanted first rate support, I wanted some obscure software and mostly I wanted peace of mind. I elected to pay whatever it cost and called in The True Professional, who sat sagely in my office and assured me his outlet was prima. I gave him an order worth over \$30,000.

Why a PC Card?

Simply this. Advertising claims that Mac computers via software emulation can run PC programs are wrong. In some circumstances, with everything (like font names) correct, you can cludge along slowly and do this. The only way seemed to be to get a PC Card.

It sits inside the Mac and is a stand alone 586 card with its own video output and its own RAM. To switch to it you hit the Apple key and the Return key.

Your monitor is wired on a special loom to both the Mac video card and the PC video card. The PC runs independent of the Mac,

but shares the floppy disk drive, keyboard, mouse, CD drive and SCSI chain.

Is this the end of the Mac?

Simply this. With all the good will in the world I have been done over by Apple and its dealer network.

My Power Mac 7200 DOS took eight hours of kerfuffle before the PC video would work properly. The second machine was ordered on the written proviso it would be pre configured and wholly fully working when delivered. The upmarket Mac vendor didn't, and the machine spent 10 days sitting alone on a desk here while different things were resolved.

The problems are these:

- First, the PC card is a compromise. The one button Mac mouse doesn't do what Windows 95 wants, and my CD drive doesn't work on the PC side.

- The great leap into Power Mac software hasn't made my life better, our Connections Masthead (an EPS file) was unreadable on screen (but it still printed) and our film house report the same problem. A redraw was required, the problem lost us valuable hours. And performance is not hugely better.

- The Mac dealer network are dispirited and if you look at the place we last dealt with, barely competent.

The raft of hassles and cost mean that a better step for us would have been to quit the Mac platform entirely and move direct to PC. Mac has had one software platform change (from 640XX to PowerMac with its new operating system) and cannot support another. But that is exactly what Apple have in mind with Rhapsody next year!

Saving grace

There are a lot of things to like about the Mac. If you are buying a Mac to run an audio recording, video or editing programme, then buy it as a package and it will perform impressively. This is very true. Get your vendor to install every extension, control panel and pref file required. Have a full demo before you pay. All will be AOK, it'll work for years and years.

But if you need a computer for office or home, or for desktop publishing, the 'net, or if you plan a network, then go Intel PC.

The time comes when you need to decide: What do you want?

A stand alone computer dedicated to a task, or something that will now - or one day - be networked?

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 Nominal Impedance 8Ω
 Enclosure Material Polypropylene



FACTOR 12 Frequency Response 35Hz - 20kHz
 Power Handling RMS 200W
 Programme Power 400W
 Sensitivity (1W/1M) 94dB SPL
 Nominal Impedance 8Ω
 Enclosure Material Polypropylene

FACTOR 5 Frequency Response 70Hz - 20kHz
 Power Handling RMS 80W
 Programme Power 160W
 Sensitivity (1W/1M) 90dB SPL
 Nominal Impedance 4Ω
 Enclosure Material Polypropylene



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Write in Reader Service Number: 144



This quality line-up is just part of the great new range of powered and non-powered mixers from Inter-M. Featured here from left the CA8220 8/6 ch. 200w + 200w rack mount mixer; the CMX 2464 24 ch. 4 bus; the CMX 1642 16 ch. 2 bus CMX series mixers; the PC 1225 12 ch. 250w + 250w power mixer with digital sound processor; and the MX 1242 12 ch. rack mount mixer.

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MAGNA
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Write in Reader Service Number: 145

McLean Audio busy

Richard Bilinski, Managing Director of **McLean Audio Services** reports a busy period commencing with the *Formula 1 Grand Prix Ball*. Over 80 channels of audio were required at both house and monitor consoles.

They also supplied the main audio for the Moomba River system and the 4-channel Aqua-Screen presentation (system design by Denis Bourke with Simon Venning audio operator/system engineer) as well as several entertainment stages within the Alexandra Gardens.

McLean Audio Services provided audio facilities for the HSV Channel 7/Royal Children's Hospital *Good Friday Variety Concert* broadcast live from the John Batman Theatre at the Melbourne Convention and Exhibition Centre. Broadcast audio control room equipment was provided for this show along with theatre and stage foldback sound with house and monitor system engineers.

They were involved in supplying systems for the *Melbourne International Comedy Festival* at a total of 17 venues as well as providing theatre sound facilities for the GTV 9/Comedy Festival Gala broadcast held at the comedy theatre.

The Easter weekend finished the month with three days of the annual *Greek Antipodes Festival*. This year being the 100th anniversary of Greek settlement saw an expansion of the festival to include international acts such as George Dalaras requiring PM 3000 and Midas XL3 consoles to meet their requirements. Overall an exceptionally busy month.

John Scandrett designs HK handover sound

It has been announced that Melbourne based theatre sound de-

signer John Scandrett of System Sound will head a team responsible for the sound design at the Hong Kong Handover Ceremony on June 30th. Their task will be to faithfully represent audio content from the occasion to an international TV audience of millions.

John Scandrett said, 'This event will be seen by more people than the Academy Awards. We have scored some major wins over the past eighteen years and this will be one of our major challenges. It recognises the quality work that System Sound does.'

System Sound is recognised throughout the Asia-Pacific region as Australia's longest standing theatre audio engineering company, with almost 20 years specialising in music theatre, opera, drama and orchestral concerts. System: T 03 9529 2633

AM score in Singapore

Audience Motivation inform us of a recent installation in Singapore. A site specific installation designed to recreate a moment in Singapore's history: The surrender of the British Malaya Command to the Japanese Army. The site, now owned by the Fort Canning Country Club, has been turned into a AUS\$1.5million recreation of the event.

First up, visitors are shown a video produced by Audience Motivation which catalogues the events leading up to the surrender day, they then collect infrared headsets and descend into the bunkers. They apparently walk through rooms combining multimedia displays consisting of audio visual information points, animatronics, static models and audio design.

'We've produced a complex digital sound floor throughout the building to cover the transitions between rooms,' explained AM producer David Jellings. 'This is a realistic, multi-layered sound track of environmental effects, for instance, typewriters,

conversation, telephones ringing and far off explosions. It is not a museum, it's a complete audio visual experience.'

All audio tracks were digitally recorded at AM Studios in Sydney then mastered as a CD-ROM computer file and downloaded into the display sound stores by the project's hardware contractor. The show was produced in English, Mandarin, Japanese, Malayan, Tamil and Korean and has been open since February.

Rude interruption in Tassie

From Tasmania Tour Manager Craig Saward informs us of a recent show by lighting company Extreme Lighting where the lights wet off abruptly. The lighting technician plugged both his desk and moving lights controller into the nearest power point only to find that the power point was specifically designed for use by the heating system, and was controlled by a timer that cut electrical supply at 10.30! Whoops! Full points though for the operator who traced the problem and promptly arranged supply from F.O.H., all in under a minute. That's quick.

Install action at Entertainment Installations

Entertainment Installations (NSW) and Neale Mace report some recent activities and supply:

- A mini theatre system to Valley View Public School - 1xAllen & Heath GL2000/16, 2xMartin Audio ICT300s, 1xQSC USA 900 amp, Mi processor, CAD CM100 choir mics, Denon DN-610 CD/tape unit, Pro-co Multicore, 3xRibalta 4xcyc lights, 8xPar56, 1xJeil JM300 amp, 2xProline speakers (stage fill).
- Pulsar Fresnels to Mingara Recreation Club.
- Disco Lighting and Audio

System for Toukley RSL Club - 4xKlipsch KP-2502 speakers, 2xKlipsch KP-1000CX subs, 2xQSC MX1500a amps, 1xFurman Q-602 EQ, 1xDenon 2000F CD, 2xTechnics SL1200 turntables, 1xGemini PMX1600 mixer, 1xTriTruss rig, 4xMartin Roboscan 812, 2xMartin Roboscan Pro518, 1xMartin 2308 controller, 1xMartin Magnum Pro2000 smoke machine, sound activated FX from Geni and ADJ, 8xPar 56 for additional stage lighting.

Entertainment Installations have also received an order for audio and lighting for a new theme bar in Sydney based on the Ettamogah Pub.

New Array for Perth

Stage and Studio Productions - Perth, WA has just purchased a brand new JBL Array systems for their expanding hire stock. The system included 6x4892 box's complete with flying gear and 8x2241 JBL 18" Subs, Crest amplification in two dedicated racks, and roadcasing for the entire system. Their intention is to target both local and national theatre and corporate markets which is complimented by the rest of their hire stock which is very much theatrically based. All enquires to Byron Tarry or David Cook 09 227 9932

Sontec & the tubes

Sontec are in the process of installing a range of audio systems into a number of Victorian shopping centres. Equipment used is based on designs incorporating distributed IMP 24 volt transformerless amplifiers located at the speakers. Additional components utilised include Soundtube speakers which provide a full 360 degrees dispersion pattern. Some recent projects completes include Springvale, Deerpark, Chadstone Shopping Centres and Wonthaggi RSL. Contact T 03 9876 2333.

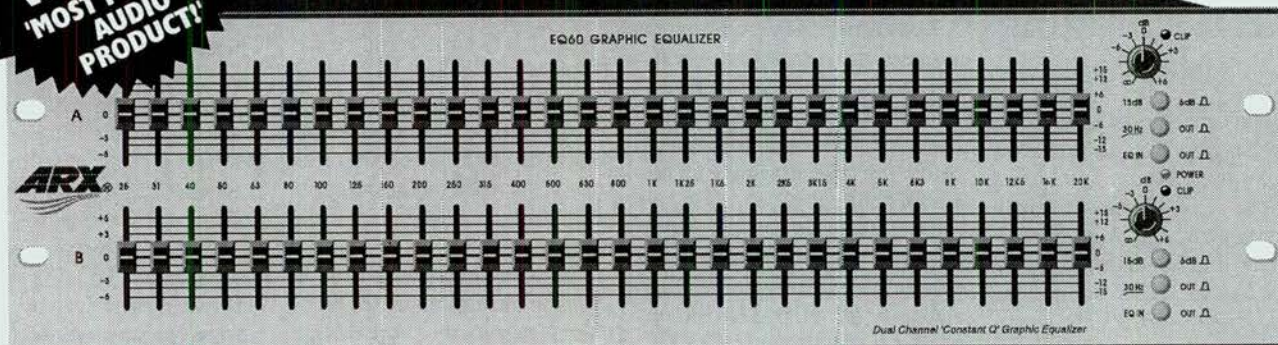


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THANKS!



A cartoon drawing of a dog, possibly a Weimaraner, standing on its hind legs and holding a glowing lightbulb in its mouth. The dog has a happy expression, and the lightbulb has several lines radiating from it to indicate it is lit.



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PRODUCTION NEWS

Event Logistics

Over the past twelve months Event Logistics has been involved in a range of jobs including: Moomba Festival, Desperate and Dateless Ball, SOS Ball, Australia Day Concerts, Pride Victoria March, Victoria; Technical Management at the David Williamson Theatre; Handspan; Castlemaine State Festival (including 17 separate venues and 60 different productions), Energy Victoria, Galaxy Awards; and others!

Event Logistics range of services offered include: event co-ordination, festivals management, artist liaison, logistics management, funding liaison, technical direction of festivals, performances and venues, production management, council liaison, risk assessment lighting design and operation, stage management sound design and operation.

ICG's Plasma

Intercity Gearhouse have taken delivery of the new Fujitsu 21" Plasma Video & Data Screens which are 7cm deep, applicable for trade shows and areas where space is limited.

Merri's Staging News

Some recent production news from Staging Rentals included the Super League Tri Series launch; The Golden Slipper Awards; Ready to Wear in Melbourne during fashion week, MTV Launch, NSW Sports Star of the Year Award, The arena stage for the Sydney Easter Show, The Desperate and Dateless Red Cross Ball, Shirley Bassey Concerts at the State and Capital Theatres, The Corrs, Leane Rie and Harry Connick Junior Tours.

Staging Rentals have also acquired twenty brass bollards with red velvet rope from the USA and will be available for hire at \$35 each. They have also just purchased a number of risers, steps and flats to add to their existing stock. T 02 9519 6300

Rhonda PA

System Sound have designed and engineered the first production in the new Crown Casino Showroom, *Red Hot & Rhonda*, which opened May 8, 1997.

Rossound

Rossound Hire provided audio for the Wagin 'Woolarama', apparently the largest agricultural show in regional Western Australia. There were two main parts to the system:

1. The general coverage system based from their Studio Caravan and consisting of three legs of speaker systems using a Mackie MS-1402-VLZ mixer, ARX SX800C amplifiers and about 50 Toa TH50 horns

2. Individual P.A.s for the fashion parade, breed sheep, wool, shearing, goat, horse and cattle presentations and judging. Most of these consisted of a Vega or EV radio microphones, EV 100M mixer/amplifier and two EV SX100 speaker systems. The team was led by Rossound Hire's founder and owner Ian Ross together with David Craigs and Steve Smith.

Rossound Hire was also awarded the contract to provide the sound for the schools ANZAC day service held at Kings Park War Memorial a few days before the students broke up for school holidays.

The system was installed and operated by David Craigs who together with Steve Smith used eighteen EV N/D257B microphones on K&M stands, ARX DI-1 and DI-2 direct units, a Soundtracs FMP24 24 channel audio mixer, ARX graphics and SX800 and SX1500 power amplifiers driving four ARX PowerMAX 3 foldback wedges and a quantity of EV SX100 speaker systems on K7M 214/6 stands.

The event included a 50 piece high school concert band, 80 voice choir, narrators, actors and players.

Rossound: T 09 9457 4044

Mach installs

Black Express, Sydney have installed a Mach Installation Series into the Golden Sheaf Hotel at Double bay, Sydney. The system consists of four M72 8" 2-way mid high cabinets with two M151II 15" subs. Also news from the Mach stable, Wollongong Greek orthodox Church and Berkley Sports Club now have a range of Mach M42 background Series installed by Events Pty Ltd in Wollongong. Contact: Audiology, T 02 9584 0033.

Laservision

Laservision technology has also been involved in a number of projects in the Asian region including permanent waterscreen attractions in Singapore (Sentosa Island's Musical Fountains), China (Science Fantasy World) and South Korea (Everland). The last project was a multi Display-Media spectacular called "Miraculous" created for Samsung's Everland theme park, apparently the largest of its kind in Asia.

Laservision's latest attraction/development contract is at Taman Ria in Jakarta, Indonesia. The project is a themed, cultural attraction built around a shimmering Aquajet water screen 30 meters in height. The water feature is controlled by Laservision's proprietary 'Liquid-Logic' technology.

Closer to home Laservision is supplying the means and the technology to run the "AquaMagic Film & Laser Spectacular" at Cockle Bay, Darling Harbour Sydney. The floating installation comprises two Laservision Aquajet Waterscreens which form a projection surface onto which synchronised coloured animation and film is screened. There are two technology barges which house the technology that synchronises 70mm film production and integrates lasers, lighting, sound and fountains. The film projection equipment delivers 16 kilowatts of light energy.

Theatre News

○ **Jands** and **Sound Advice** have won a \$500,000 contract for the fit-out of the new Canberra Playhouse Theatre. Sound Advice will supply the stage management system, closed circuit television and cabling whilst Jands will install the house curtain track and drive, counterweight system, forestage lift, cabling infra-structure and associated machinery.

○ **Regent Theatre:** The last performance of *Sunset Boulevard* will be on July 18. The production was planned to run longer and its closure could leave the theatre dark until *Show Boat*, planned for early 1998.

○ Some venue facts on the new **Sydney Harbour Casino:**

- There will be a banquet and meeting room for 1000 people;
- A 2000-seat Lyric Theatre operated by Andrew Lloyd Weber;
- There will be 900-seat Showroom Theatre catering for upmarket cabaret.
- The entire project will cost \$867 million.

○ In Queensland the **South Bank Playhouse** drama theatre construction continues. Started in November and flagged for completion in the new year, the 850-seat theatre will be the new home to the Queensland Theatre Company. It will be also linked to the existing Queensland performing arts complex. But is it suitable for the QTC? Whilst agreeing that the new playhouse theatre was 'fabulous', QTC's artistic director Robyn Nevin believed it was too big for her company. For this reason a 500-seat theatre was being considered for stage six of the cultural centre. Another alternative may be the refurbishment of the Princess Theatre at Woolloongabba.

○ The Perth Theatre Trust plans to restore the original Hay Street facade of **His Majesty's Theatre** which has been bricked up since 1980. His Majesty's is Australia's last remaining Edwardian Theatre. Next year the trust plans to rebuild two balconies which were removed from the facade in the 1950s.

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Slow Down the Galahs

Compression of a Sound Designer

by Madeleine Murray

Gareth Vanderhope is tired, stressed out, and tense. But he still manages to let me sit in for an hour while he designs the sound for a rough cut of *Dark City*, the new film by Alex Proyas.

The schedule is tight, so tight, that they are actually mixing reel 3 in the mixing theatre down the hall, while Vanderhope is designing and putting down the sounds for reel 4. He has to keep ahead of them. He is doing well, working 18 hours a day, and even stays cool when the Mac running ProTools "has unexpectedly quit because an error of Type 1 has occurred," as that little box on the screen tells you. The little box you don't want to see if you have been distracted by a visiting journalist, and not saved your work for the past hour. (*Hey we know that feeling! -Editor*)

To add to the stress, Vanderhope has mainly worked on Editracker before. This is his first Pro Tools experience.

Sound today

Post production on a film is exactly that. Post, which means after. After the money has run out. After the time has run out.

It was the same story on *Romeo and Juliet*. Vanderhope, who designed the sound, and Roger Savage, the sound supervisor, stayed up all night working, then took a taxi to the airport with

the sound tracks, flew to Los Angeles, went straight to Lucas' Skywalker Ranch, and continued working.

Film sound has changed, and the industry has not kept pace. Digital sound has meant that there are more tracks, more complexity, more artistry expected from a sound track. Sound has become an important part of going to the cinema, having the state of the art, surround, digital experience.

And the new digital editing systems are more comprehensive now, so that the sound designer, or editor is fading, compressing, reverbering, and tweaking things on the computer that were once done by others, in the mixing theatre.

So much more is demanded of the post sound department, but they are still working long hours, to the last deadline, for standard wages. There is still no major credit for the sound designer, as there is for the production designer. The aural, being invisible, and partly subliminal, is overlooked.

Galahs

Apart from the pressure, *Dark City* would be a dream film for a sound designer. It is a bizarre fantasy set in another world, and time. During my visit, Vanderhope is working on a scene

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where a burnished, futuristic 10m head opens before an army of Blade Runnersque men. The deep gongs, bangs, creaks, reverb, whooshes, and cracking that Vanderhope has created sound like a modern music composition, a soundscape. "A lot of the components are created on the keyboard, using sounds I've manipulated on the keyboard," Vanderhope says. "So I've ended up with very few components on the screen, that is four stereo components made up of 20 sounds. One of the components is actually galahs."

He moves onto a scene where an ordinary decrepit room morphs into a domed drawing room, and a table stretches about 4m in a bubbling liquid overhead shot. Which is what you'd expect from Proyas, who directed *The Crow*, and the memorable Triple M ad, with the winged eggs. In this scene, Vanderhope is fine tuning the sync on the sounds he has made. "You can get yourself in a mess," he says. "If you have one component that's out of sync, that's not in the right spot, it can throw the whole thing out."

He works on fine tuning the fades of the sounds, by drawing over the existing fade patterns on the Pro Tools program.

Vanderhope is wondering aloud, "What do I do when this door appears, or this building starts growing out of the earth. What sound does that make? Well, if I grab a track of that metal crunching, and slow that down, and stick a formula car slowed backwards, and a sticky tape rip, and get a monkey's squeal and slow that down....It's a time consuming process of trial and error.

You need to spend time just listening to sounds, like glass crunching, or different things that can't be sourced from a library.

"Actually nothing in this film can be stock sound. Components have to be manipulated from sources. Like I've got a recording of a shimmering copper sheet, which I can use, but it has to be completely manipulated. Everything has to be slowed down, turned backwards, pitch changed, effects added, whatever. Also I'm composing on the keyboard."

The next shot is of a hypodermic needle looming into close up, coming towards a man's forehead. What is the sound of that???

He puts a temporary sound onto the table stretching. "I need to record some components for it. Because the table has a metal liquid look, I really want to try and get some liquid metal sounds for that. I'm not sure what that will be."

Gear

The sampling keyboard, Ensoniq ASR 10, samples sounds, and allows Vanderhope to connect various onboard features like pitch shift with a wheel down in the left corner. He composes sounds, almost like music, by playing groups of sounds and chords, and also working the keyboard as a sound plays. "I have flexibility with this, so it can be in intuitive thing, rather than rigid. It's hard to be flamboyant with a stock sound in an



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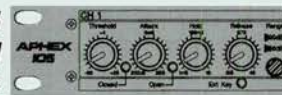
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Gareth Vanderhope

editing system. With this, you can just get on there, even with your whole arm! I like the flexibility of this machine, It has onboard effects, and has a really neat way of playing sounds." Vanderhope has a big library of sounds stored and catalogued on disc that he can call up.

As far as Pro Tools goes, Vanderhope says, "It has lots of pluses and minuses. It is more designed for music than film. It doesn't have a sync line, the library needs work." But Vanderhope has not yet used the new Pro Tools 4.

Beside the computer is a 16 channel Mackie mixing console, which he uses to get in and out of the computer. There is an Eventide harmoniser, and a relic, a Nagra 1/4" machine for pitch shifting. "Basically analogue pitch shifting is far superior to digital, especially when you're slowing down," he says.

Free time

Vanderhope is taking two weeks off while *Dark City* goes to America for an audience screening. He's going to Wilson's Promontory, to do some water recording. "I'm doing a soundscape for the ABC radio, for The Listening Room. So any time I get off, I try to record things."

DAT: the pros and cons

Vanderhope uses a DAT to run around and record magpies, water, and washing machines. It's handy because it's small, light, digital, and portable, but not perfect. "I find them problematic, because they're not reliable. I'd really like the DAT, but every time I go recording, they break down. I recently went to Wilson's Promontory to record some water sounds, but as soon as I hit the record, something went wrong every time. They don't like moisture or dust, they're so sensitive, that you have to have them in a pristine environment, which defeats the point. So it's a love hate relationship with DAT recorders."

The little trombone boy

Vanderhope's parents weren't particularly rich. He learned the trombone in the community performances of the Dandenong Ranges, where he grew up. "We had a jazz band, and a concert band, and actually performed for Princess Di once. That was a really intense period where music was such a part of my life. But I couldn't do Year 12 music, because I didn't have the technical training that I needed, and the teachers were too expensive. I also taught myself the piano, but again you can't do Year 12 just as a self taught improvisationist."



He composed and constructed music, doing all the sound for school plays, and a soundscape in Year 12. "That took over because it was more of an abstract form of composing, where I didn't need that classical training to pursue it. I liked it, then discovered the world of sound for film, and I realised that was exactly what I wanted. I was interested, and passionate about going into that area. I pursued that, got a job with Roger Savage, and learnt on the job."

Slow motion clapping

"*Shine* was good, because we had the final cut to work with. We weren't working with different versions all the time. There was a lot of sound subtlety in it that affects your subconscious."

In a film like *Shine*, some of the sound is related to memory. Like when Helfgott is a little boy, performing in the wooden hall, the experience is shown how he remembers it. The sound of the audience clapping, filtered, enhanced and distorted by his fear. The grotesque surreal quality of a nightmare. "The sound of the windscreen wipers in the car arriving at the hall crossfades to the crowd clapping in slow motion," Vanderhope says. "They weren't



clapping in unison, but randomly. I wanted to create the cacophony of clapping, but with something surreal, or odd about it. If you slow down random clapping, it's not that interesting. It sounds a bit like horses hooves. And it didn't lead you anywhere. It is just this mash of sound, without any focus.

"So I pinpointed people, as the camera panned around the room. Then I got this recording of a crowd clapping in unison, and slowed that down. It became a phooaeu phooaeu sound. I tried to get that in sync with each person as it pans around the room. And I built on it, so it became a cacophony from a whole crowd clapping, but it was actually a combination of a whole crowd clapping in unison which had been laid to create this cacophony. That was very fiddly, to try and make that work, because it was very hard to get it in sync with people. It was a subtle balance between it sounding too strange, but I think it worked.

"Then there were key sounds, like David as a teenager standing outside Kathleen Pritchard's house, in a bush setting. I told Scott Hicks, the director, I had a key sound I wanted to use, as a memory thing. It's the sound of a butcher bird call, with a particular sound that I recorded for the film. I went up to the Dandenongs to get some nice sounds for *Shine*, and this bird flew down on a telegraph pole, and called its little heart out. It was only 10m away, so it was a very strong sound.

"So I put that in, and later on, David is at the asylum and he's looking at this tree, and he's thinking about the past, and I put the same bird in there. Then the camera pans back into the asylum, and the pristine sound of the bush cross fades into clinking metal and the stark sound of a trolley trundling down a corridor. That was the sort of thing I was trying to put into the film. And Scott had the sensitivity to try and bring that out in the mix. Because it's all very well to design these things, but if the director wants to go to the mix, and be a hero, and pile a whole lot of music over everything, and not consider any of the subtleties that the sound designer has put in, then all your work just goes down the drain.

"It was a very good experience, and we've been nominated for Best Sound at the British Awards. And the *Shine* team are paying for me and Roger Savage to fly over, which is nice."

Romeo and Juliet

"I was trying to reflect the visual style, with the sound. Every film has a different style, and we have to shape things to that. I took a very flamboyant approach to the sound so that anything that moved had a whoosh, and some exaggerated sound. Like when the fireworks exploded, I didn't just want to have a realistic bang, I wanted to create extra colour.

So I put ice cubes in a bucket, and sampled these ice sounds, and got a shshsh shimmering effect, and added some chimes to give it more colour. So when the fireworks exploded, they would go bang and then shimmer with sound.

"I put lion roars, and things to enhance and punctuate certain moments. They are effected, so they don't sound exactly like a lion roar. I used lion roars backwards, and metal clicks and groans from a washing machine in a scene when Tibald crashes the car. So when the car is spinning around, it's a surreal experience, rather than realistic. More trying to reflect the emotion rather than the reality."

The sound was a striking part of the thrill of Luhrmann's film. The opening scene had jet speed zooms into LA, the signs, the buildings. "That was a combination of my sounds, and music. I did that at 2am, the night before we had to fly to Skywalker. I was sitting upstairs. We had just gotten the final version of that reel. I got wind, or some sound, and put phasing and effects on it, trying to create a psheewwwewww sound, which took you in with that zooming effect. It was about ten stereo tracks. Somehow it just worked. I think I was under such pressure that it had to work, and it did."

Gareth Vanderhope won an ENTECH 1997 award as Film Sound Designer of the year recently

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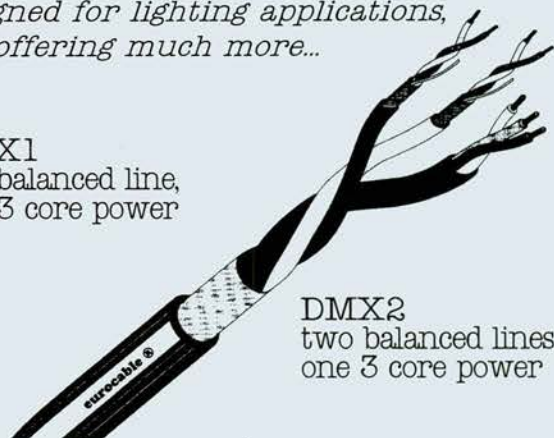
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Then the pub manager comes in.

"Is there a Duncan here? Phone call for your mate."

Me? Who'd be calling me up here? "Hello?"

The rasping tones of Johnny, lead singer for the Jerries, greets me.

"Dunk, mate."

"Johnny, where are you? You're supposed to be on any minute!"

"Jeez mate, the car's broken down in Woop Woop. We won't be able to get there for another couple of hours. Can you let the pub manager know?"

"Shit, he won't like it," I said "There's a big crowd here already and they're getting nicely hosed. There'll be trouble if something doesn't happen soon."

"Yeah, well, do the best you can mate. We'll be there as soon as possible" and with a click he was gone.

Do the best I can? What sort of an answer was that!

I went over to Wally, who was doing stage and lights, and filled him in on the situation.

He had worked with the band for a couple of years and obviously knew them much better than I did.

"Ah that bloody EH wagon" he sighed. "That thing breaks down more than it goes. I wish they'd get something decent. Why don't they get a Tarago (every band's dream vehicle at the time. I think Wally also envisioned himself cruising around in it in relative luxury compared to the old F series Toyota)"

"So what are we going to do for a couple of hours to keep this lot happy?" I asked. "There's no support band, and they'll be pretty sick of my 20 Top Partystoppers tape by then."

"Two hours away... I dunno," he said, opening his trusty Esky and reaching for another can. He took a long sip and then inspiration struck him like the proverbial icepick in the forehead.

"I know what to do," he exclaimed "...we'll play as the support band. You can play guitar, I'll play bass, and we'll get some boxhead to play drums. What do you think? Great idea, eh?"

Hmm, as great ideas go it wasn't much competition to sliced bread, CDs or television, but I could see his point - there wasn't much else we could do. I hadn't played a note on the guitar in public for a couple of years, and I had no idea of Wally's prowess on the bass, other than hearing him play Smoke on the Water as he set up.

"But what songs are we going to play?" I worried. "The crowd's not going to like it much if we stuff it right up." "Shit, what does that matter," he argued. "Look, it's Saturday night, we're in the country, and the audience is getting nicely pissed. What can go wrong?" and with that he disappeared into the crowd to find some 'boxhead' to play drums.

I sincerely hoped he would be successful - a two man trio is a little bit too minimalist for me.

Have you seen the amateur video of a '70's Who concert in America? The one where they're only a few minutes into the show and Moonie takes a backward dive off the drums, knocks himself unconscious and is carried off by paramedics. Pete Townshend goes up to the microphone and asks "Can anyone here play drums?" and then has to audition the prospective Who drummers from the line that instantly forms at the side of the stage. Well I didn't want to be in that position.

Luckily a couple of minutes later Wally emerged from the crowd with a soul mate he introduced as Phil, who seemed to be half in the bag but assured us he could play drums.

So it was on. We were definitely going to be the support band, which left me with another problem. Who was going to mix? I figured that although Wally could find some boxhead to play drums, he was unlikely to find another one that could mix. So I adjusted the desk for a 'set and forget' mix, put the compressor on hard limit, and went off to work out some songs.

Ten minutes later we were on stage playing. Phil the drummer had a VB carton on his head with a couple of eye-holes punched out, and was introduced by Wally as "...and on drums, Mr Boxhead". He stood up, took a bow, and promptly fell off the drum riser. Thoughts of The Who's video started coming back to haunt me, but luckily he clambered back up and settled himself back on the drum stool.

We played an eclectic collection of songs, wisely stick-

ing to the time honoured rules of nothing too complicated, nothing too new, and nothing with more than three chords!

This consisted of every Chuck Berry, Rolling Stones 12 bar that I could think of, plus Summertime Blues and others in a similar vein.

Wally was in his element, jumping and waving the bass around and occasionally even hitting the right notes, but after forty five minutes Mr Boxhead was starting to audibly wilt and his timing, never good to start with, was becoming more erratic as we ground on.

As we neared the end of our second rendition of B-B-B-Bad To The Bone (by popular request - from Wally, who knew the chord!), I saw a couple of familiar faces in the crowd. The band had arrived! We were saved.

I pointed them out to Wally.

"Thank you very much everybody," he said, "We're the Road Crew and we'll see you again soon. The Jerries will be on after this short break." And that was it; we were finished.

Wally gave Mr Boxhead a couple of precious tinnies from his Esky, slapped him on the back and pushed him back into the crowd.

The Jerries came on a few minutes later, the night was a success, and everyone went home drunk, deaf and happy. Johnny came up to me afterwards.

"Hey, thanks for helping us out like that, Dunk, mate" he rasped. "The pub manager reckons the whole thing went great."

He paused for a moment, and then continued.

"Do you reckon you could do it again tomorrow night?"

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for as many channels as required. Not designed to replace your 56 channel FPH monster but makes a great submixer, mobile and installer unit. \$941.

MIXXMaster 6 Input Mic/line mixer - 3 way EQ, Pan on 2 Mic and 1 stereo line inputs, plus 1 stereo aux line in. Directs outs, Phantom Power. Priority override switch for "table 24 your dinner is ready an the restaurant is burning down". Can link up to other MIXXs or MIXXmasters via unique 'Open Buss' connectors for as many channels as required. A little Ripper! \$778.

MaxiMix 4 channel stereo or 8 channel mono line mixer. Massive headroom, intuitive interface. Great as effects submixer or club installs. \$710.

ALLEN & HEATH

A.R. Audio Engineering (02) 9810 5300

MixWizard 16:2 16 mono input desk top or rack mount mixer, left/right/mono outputs, 6 auxiliary sends, 4 band EQ with 2 mid sweeps, 2 stereo returns, 100 mm faders, direct outs, vertical individual PCB construction. \$2795.

MixWizard 20:8:2 8 mono/6 stereo input desk top or rack mount mixer, 8 recording busses plus left/right/mono outputs, 6 auxiliary sends, 4 band EQ with 2 sweeps, 2 stereo returns, 100 mm faders, direct outs, vertical individual PCB construction. \$2995.

GL-2000/12 12 input FOH mixer, 4 sub-groups, left/right/mono outputs, 6 auxiliary sends, 4 band EQ with 2 sweeps, 100 mm faders. \$3995.

GL-2000/16 16 input (14 mono/2 stereo) FOH mixer, 4 sub-groups, left/right/mono outputs, 6 auxiliary sends, 4 band EQ with 2 sweeps, 100 mm faders. \$4995.

FENDER

Fender Australia (02) 9666 5077

PX2212D 12 channel, built into roadcase/stand, 3 way EQ, 4 aux, built in stereo graphic e.g and digital delay/reverb, 600 stereo power amp built into roadcase, 5 year warranty. \$3999.

PX2216D as above but 16 channels. \$4499.

BEHRINGER

Musiclink (03) 9429 9299

MX3282 32 channel, 8 bus, 3 band EQ with swept mids, 8 aux sends, 24 inserts, 4580 op amps, 19" 2 U power supply, 75hz low cut filter per channel. \$3499.

MX2442 24 channel, 4 bus, 3 band EQ with swept mids, 8 aux sends, 16 inserts, 4580 op amps, 19" 2 U power supply, 75hz low cut filter per channel. \$2499.

MX2804 28 input, 2 + 2 bus mixer, 3 band EQ, 4 aux sends, 8 inserts, 8 direct outs, rack mount-

able, external power supply. \$1499.

MX2004 16 channels, 2 + 2 busses, 3 band EQ with swept mids, 2 aux sends, external power supply. \$999.

FOLIO

Jands Electronics (02) 9582 0909

Notepad small, compact quality mixer: 4 mic and stereo inputs; +48v phantom; RIAA preamps; stereo mix, monitor and post-fade aux outputs; peak and VU metering; headphone output. \$595.

Folio FI compact mixer: 100mm faders; 14 or 16 input versions; 6 or 8 mono inputs with UltraMic mic-pre, 3 band swept-mid EQ; 4 stereo inputs; 3 aux outputs, PFL. \$1295.

Folio Sx 20 inputs with digital quality; 12 mono, 4 stereo, 4 bus with real subgroup routable to mix; direct outs from ch 1-8 for multi track recording, PFL. \$11995.

Folio Rac Pac 10 mic, 9 stereo line; 4 groups, 6 aux, 100Hz HPF, 3 band EQ with mid-swept, 19" rack mount, PFL and True Solo-in-Place; external PSU. \$2995.



Mackie CR1604-VL2

SPIRIT

Jands Electronics (02) 9582 0909

Spirit LX7 24:4:2 live console; 4 band EQ with 2 sweeps and EQ bypass, 6 aux sends switchable pre/post, 24 mono, 2 stereo, 100mm faders, UltraMic mic-pre. \$4995.

Spirit Live 3 mk2 four frame sizes 8, 12, 16 and 24. True 3-bus console (left, right and mono) 4 band EQ with 2 sweeps and EQ bypass, 6 aux sends, UltraMicPlus mic-pre. \$2695 (8ch) thru \$5995 (24ch).

PEAVEY

Audio Telex Communications (02) 9647 1411

Unity 300 12 channel compact mixer. 4 dual mic/line inputs with insert points, 4 stereo line inputs. 2 band EQ and 2 aux sends per channel. Selectable 48v phantom power, internal power supply. \$685.

Unity 500 14 channel compact mixer. 6 dual mic/line inputs with insert points, 4 stereo line inputs. 2 band EQ and 2 aux sends per channel. Selectable 48v phantom power, internal power supply. Optional rack mount kit. \$685.

BUYERS GUIDE

LIVE MIXING CONSOLES

Unity 1002-8 8 channel mixer with 3 band EQ, aux send and monitor send per channel. Selectable phantom power, internal power supply. Optional rack mount kit. Also available in 12 channel. \$941.

Unity 2002-24 24 channel mixer with 3 band EQ, 2 aux sends and 2 monitor sends per channel. Selectable phantom power, internal power supply. Also available in 12 and 16 channel. \$2232.

PEAVEY

Australis (02) 9698 4444

Unity 300 12 channels, 4 mic/line, 4 stereo line, 2 band EQ, 2 aux sends, stereo tape in/out, phantom power. \$699.

Unity 1002 range of top quality mixers at a budget price. 8 to 24 channels, 60 mm top end faders, phantom power, 3 year warranty. From \$999.

PHONIC

CMC Music Pty Ltd (02) 9905 2511

Impact 8 8 channels, 3 band EQ, 3 aux sends, mute switch on each channel, 48v phantom power through XLR inputs automatically, new pre-amp technology provides twice the headroom of ordinary mixers at this price. \$995.

Impact 12 12 channels as above. \$1195.

Impact 16 16 channels as above. \$1495.

Impact 24 24 channels as above. \$1995.

SOUNDTRACS

Synchrotech Systems (02) 9417 5088

Topaz Mini 4 Mono Mic line & 2 Stereo inputs, 3 Band EQ, 2 Aux's

48V Phantom, LED output metering, 2 Stereo FX returns, Solo, 2 Master outputs, Balanced throughout, Rack mountable. \$595.

Topaz 12/4 4 Mono Mic/Line & 4 Stereo line inputs, 3 band EQ, 2 Aux's, Stereo group & L+R masters, 48V phantom, LED output metering, 60mm channel & output faders, Solo & Chan mute, Balanced throughout. Also available in 14/4 and 24/4 versions. From \$1,205.

Topaz Macro 10 Mono Mic line & 2 Stereo inputs, 3 Band EQ, 2 Aux's,

48V Phantom, LED output metering, 2 Stereo FX returns, 60mm channel & output faders, Solo, 2 Master outputs, Balanced throughout, Rack mountable. Also available 24 input format. \$1,435

Topaz MAXI 24-4-2 22 Mono & Stereo inputs, HPF, 4 Band EQ (2 mid sweeps), 8 Auxiliaries, +48 Phantom power, Inserts & Direct outs, LED metering on Aux, Groups & Masters, 4 stereo FX returns, Talkback, 4 groups Stereo + mono outputs, Peak LED's on channels, 100mm faders, Balanced throughout. \$4,200.

YAMAHA

Yamaha Music Australia (03) 9699 2388

MX 12/4 8 mono/2 stereo channels, 4 buss, 3 band EQ, 2 aux with stereo return, 7 band graphic, built in digital effects, record o/p's, meters, phantom power. \$1095.

MM 1402 14 input channel (6 mono + 4 stereo) 3 band EQ, 2 aux, CUE, 2 stereo returns, 5 band graphic. \$899.

MX 200-24 24 mono channel (dual inputs), 3 band EQ, 4 aux with 2 stereo returns, CUE, phantom power, stereo plus mono outputs, stereo meters.

\$2595.

MX 400-24 24 mono channel (dual inputs) + stereo inputs, 3 band EQ, 5 aux send, cue, inserts, 4 sub group in stereo meters, talkback. \$4295.

EV/DYNACORD

EVI Audio (Aust) (02) 9648 3455

MCX 1900 rack mountable mixer.

Twelve mono channels with 3 band mid sweep EQ plus four stereo channels with four band fixed EQ. Four auxiliaries on each channel. Stereo mixer with phantom power, balanced outputs and PFL on each channel. \$3430.

UNDER \$10,000

ALLEN & HEATH

A.R. Audio Engineering (02) 9810 5300

GL-2000/24 24 input (22 mono/2 stereo) FOH/foldback/dual role mixer, 4 sub-groups, left/right/mono outputs, 6 auxiliary sends, 4 band EQ with 2 sweeps, 100 mm faders. \$6595.

GL-2000/32 32 input (30 mono/2 stereo) FOH/foldback/dual role mixer, 4 sub-groups, left/right/mono outputs, 6 auxiliary sends, 4 band EQ with 2 sweeps, 100 mm faders. \$8195.

GL-3000/16 16 mono input FOH/foldback/dual role mixer, 8 sub-groups, left/right/mono outputs, 8 auxiliary sends, 4 band EQ with 2 sweeps, 100 mm faders, 2 stereo returns, 10 x 2 matrix. \$7450.

GL-3000/24S 28 input (20 mono/4 dual mono) FOH/foldback/dual role mixer, 8 sub-groups, left/right/mono outputs, 8 auxiliary sends, 4 band EQ with 2 sweeps, 100 mm faders, 2 stereo returns, 10 x 2 matrix. \$9950.

FENDER

Fender Australia (02) 9666 5077

MX5224 24 channel, 4 subs 3 way EQ mid-sweep, 6 aux, 4 stereo returns, separate power supply, 2 pairs of assignable parametric EQ, 5 year warranty. \$6500.

MX5232 As above but 32 channels. \$8500.

SPIRIT

Jands Electronics (02) 9582 0909

Spirit Live 4 mk2 four bus live console 12, 16, 24, 42 or 40 mono inputs each with 4 stereos, 4 band EQ with 2 sweeps and bypass 4 mute groups, 6 x 2 matrix. \$4495 (12ch) thru \$12,995 (40ch).

Spirit 8 8 bus live mixing console 16, 24, 32 or 40 mono inputs plus 4 stereos, 6 aux, 4 band EQ with 2 sweeps and bypass, 4 mute groups, 10 x 2 matrix, internal meterbridge. \$3995 (16ch) thru \$17,995 (40ch).

Spirit Monitor mk2 foldback mixer: 24, 32 or 40 mono inputs, 12 monitor sends, mic splitter on every mono ch, engineers wedge output, stereo ambience mic inputs for 'in-ear' monitors. \$12,995 (24ch) thru \$16,995 (40ch).



Allen & Heath GL4000

SCUNDCRAFT

Jands Electronics (02) 9582 0909

Soundcraft KI professional 4 bus mixing console with 8, 16, 24 or 32 mono or stereo inputs. Semi-modular construction, 4 band EQ with 2 sweeps, matrix. \$5995 (8ch) thru \$14,995 (32ch).

CLOUD

Lightmoves Technologies (02) 9560 0000

CXF 8 music channels, provide inputs for up to 16 stereo channels - 1 aux. Pre fade 2 x aux post face. 100mm ch faders. \$4550.

CXM modular mixer that enables up to 8, 12 or 16 input channels. Aux sends can be configured to operate in pre or post face by reversing PCB jumper. \$7200.

SCUNDRACS

Synchrotech Systems (02) 9417 5088

Topaz MAXI 32-4-2 28 Mono Mic/line & 2 Stereo inputs, HPF, 4 Band EQ (2 mid sweeps), 8 Auxiliaries, +48 Phantom power, Inserts & Direct outs, LED metering on Aux, Groups & Masters, 4 stereo FX returns, Talkback, 4 groups Stereo + mono outputs, Peak LED's on channels, 100mm faders, Balanced throughout. \$5,200

Topaz MAXI 24-8-2 22 Mono Mic/line & 2 Stereo inputs, HPF, 4 Band EQ (2 mid sweeps), 8 Auxiliaries, +48 Phantom power, Inserts & Direct outs, LED metering on Aux, Groups & Masters, 4 stereo FX returns, Talkback, 4 groups Stereo + mono outputs, Peak indicators on channels, 100mm faders, Balanced throughout. \$7,400.

Topaz MAXI 32-8-2 28 Mono Mic/line & 2 Stereo inputs, HPF, 4 Band EQ (2 mid sweeps), 8 Auxiliaries, +48 Phantom power, Inserts & Direct outs, LED metering on Aux, Groups & Masters, 4 stereo FX returns, Talkback, 4 groups Stereo + mono outputs, Peak indicators on channels, 100mm faders, Balanced throughout. \$8,600.

YAMAHA

Yamaha Music Australia (03) 9699 2388

O3D digital mixer, 26 channel, 4 buss, 6 aux, 4 band parametric EQ and dynamics per channels digital effects motorised faders, AES/EBU outputs. \$5995.

MC 1204 II 12/4/2 with 2 matrix, 4 band EQ (swept mids), 4 aux, inserts, cue, phantom power, talkback, 6 meters + stereo, lightweight. \$6499.

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BUYERS GUIDE

LIVE MIXING CONSOLES

MC 1604 II 16/4/2 with 2 matrix, 4 band EQ (swept mids), 4 aux, inserts, cue, phantom power, talkback, 6 switchable meters + stereo, light-weight. \$7995.

DDA

EVI Audio (Aust) (02) 9648 3455

CS3 available in 16, 24, 32 and 40 ch. frames. Three band EQ with full parametric Mid, 6 auxiliaries, 4 sub groups. Consoles feature unique left/centre/right assign. All outputs balanced on XLR. Modular design. Rack mount power supply. 16ch-\$7999, 24ch-\$9999.

Interface available in 8, 16, 24, 32, 40 ch. input frames. Four band EQ with dual mid sweeps, 6 auxiliaries on 4 knobs, 4 sub groups. Available with either effects return or matrix group modules. Large array of input module options. Fully modular design. Rack mount power supply. 8ch-\$8399.

PEAVEY

Australis (02) 9698 4444

SRC 4034 34 channel desk built into sturdy 5kB flight case. 30 Lo-2 mic inputs, 2 stereo line inputs, 100 mm **long throw** faders, 4 subs, 6 aux many more features. \$5495.

Fender PX-2200 Series



OVER \$10,000

MACKIE DESIGNS

Australian Audio Supplies 043 291 711

SR40.8 40 mic/line inputs, 8 subgroups, built-in 12 x 4 matrix mixer, ultramute section, 8 auxs, 4 stereo aux channels, built-in meterbridge. \$17,995.

RAMSA

Ramsaudio Pty Ltd (02) 9477 7377

WR-SX1A/48 48 mono/4 stereo channels, 10 VCA groups, 10 mute groups, 128 pattern memory, 20 aux/group busses, dual power supplies. \$125,490.

WR-SX1A/40 40 mono/4 stereo channels, other features as per WR-SX1A/48. \$113,290.

WR-SX1A/32 32 mono/4 stereo channels, other features as per WR-SX1A/48. Additional stereo channels can be exchanged with mono. \$99,390.

ALLEN & HEATH

A.R.Audio Engineering (02) 9810 5300

GL-3000/32S 36 input (28 mono/4 dual mono) FOH/foldback/dual role mixer, 8 sub-groups, left/right/mono outputs, 8 auxiliary sends, 4 band EQ with 2 sweeps, 100 mm faders, 2 stereo returns, 10 x 2 matrix. \$12,450.

GL-4000/24 24 input (20 mono/4 stereo) FOH/foldback/dual role mixer, 8 sub-groups, 10 aux on faders, 4 band full sweep EQ with 'Q' control on mids, 10 x 4 matrix, 8 mute groups plus 128 midi scenes, 8 track recording facility. \$17,950.

GL-4000/32 32 input (28 mono/4 stereo) FOH/foldback/dual role mixer, 8 sub-groups, 10 aux on faders, 4 band full sweep EQ with 'Q' control on mids, 10 x 4 matrix, 8 mute groups plus 128 midi scenes, 8 track recording facility. \$22,950.

GL-4000/40 40 input (36 mono/4 stereo) FOH/foldback/dual role mixer, 8 sub-groups, 10 aux on faders, 4 band full sweep EQ with 'Q' control

on mids, 10 x 4 matrix, 8 mute groups plus 128 midi scenes, 8 track recording facility. Also available with 48 channels. \$26,950.

SOUNDCRAFT

Jands Electronics (02) 9582 0909

Soundcraft k2 professional 8 bus mixing console with 24, 32 or 40 mono and 4 stereo inputs. 8 aux, MIDI scene set computer, 11 x 4 matrix, 8 mute groups, left/right/mono outputs. \$23,995 (24ch) thru \$32,995 (40ch).

Soundcraft k3 fully modular professional 8 bus mixing console, 4 band all swept EQ, 8 aux, otherwise similar to K2. \$29,995 (16ch) thru \$74,495 (48ch).

Soundcraft SM12 fully modular professional 12 mono + 1 stereo send monitor console, 4 band all swept EQ, 4 mute groups, advanced solo system, input metering. \$43,495 (32ch) thru \$57,995

(48ch).

SOUNDTRACS

Synchrotech Systems (02) 9417 5088

Megas II Stage Available in 24, 32, 40 and 48 inputs, fully modular, 5 band EQ, 6 Aux's, 6 mute groups, 48V phantom, HPF, Chan LED meters, 8 Audio groups with VU meters, TB & OSC, 100mm Faders, optional Stereo and Matrix modules. From \$14,000.

Megas II Monitor Available in 24, 32 and 40 inputs, fully modular, 5 band EQ, HPF, 10 monitor sends + L & R, 48V phantom, 13 x 10 segment LED meters, Stereo outputs, 10 monitor mix outputs with EQ, TB & OSC, 100mm Faders. From \$12,000.

Sequel II Concert series Available in 24, 32, 40 and 48 inputs, fully modular, 4 band Parametric EQ., HPF, Digital Dynamics on all inputs Gates, Compressors & Autopanners, 8 Aux's, 8 VCA / mute groups, 48V phantom, Chan LED meters, 8 Audio groups with VU meters, TB & OSC, 100mm Faders, Options: Theatre automation, Stereo inputs and Matrix modules. From \$30,000.

YAMAHA

Yamaha Music Australia (03) 9699 2388

O2R digital mixer, 40 channel, 8 buss, 8 aux, 4 band parametric EQ, 2 digital effects, motorised faders, AES/EBU outputs, time code MIDI, 64 scenes. \$13,995.

M 2000-40C 40 channel + 2 stereo into 8/2/1 with matrix, 4 band EQ (swept mid), 6 aux, inserts, cue, phantom power, talkback, 8 switchable meter + stereo etc. MIDI, 128 scenes. \$39,995.

PM 3500-40C professional 40 channel + 4 stereo into 8/2 with 12/4/4 matrix, 4 band parametric with filters, 8 aux, inserts, cue, talkback, VCA groups,

meters, 128 scenes, MIDI control. \$109,000.

PM 4000-40C professional 40 channel + 4 stereo into 8/2 with 11/8 matrix, 4 band parametric, 8 aux + 2 stereo aux, input metering, talkback, VCA and mute groups, 14 meters, inserts etc. \$135,000.

CREST CONSOLES

Production Audio Services P/L (03) 9415 1585

TC Series available in 16 to 52 channel versions with 4 or 8 groups. Includes dedicated mono bus, 4 band EQ, optional stereo input modules, optional matrix input channels. Includes power supply. From \$15,000.

GT/GTx Series available with 16 to 52 inputs, 4 or 8 groups. Includes 11 x 8 matrix, dedicated mono bus, 4 scene mute system, relatively small frame. Meter bridge available (GTx). Includes power supply. From \$19,000.

VX top of the line Crest console. Available with 20 to 52 inputs, 8 VCA groups, 8 aux sends, 12 x 8 matrix, built in oscillator, pink noise generator, standard meter bridge. Includes power supply. From \$50,000.

LM/LMx Century Series Monitor Consoles. Available with 20 x 12 to 52 x 22 versions. Meter bridge available (LMx), simple configuration of channels, comprehensive EQ, mono or stereo operation. From \$32,000.

DDA

EVI Audio (Aust) (02) 9648 3455

CS8 available in 16, 24, 32, 40 and 48 ch. frames. Four band EQ with dual mid sweeps, 8 auxiliaries, 8 sub groups. Matrix outputs plus stereo returns. Stereo input channels available. All outputs balanced on XLR, all outputs with inserts. Buss linkable. Rack mount power supply. 16ch-\$18,600.

Q2 available in 24, 32, 40 and 48 ch. frames. Extenders also available. Four band swept EQ with variable 'Q' on mids, 8 auxiliaries, 8 sub groups, matrix outputs. Various input module options available. Fully modular, compact footprint. Features left/centre/right assign. Rack mount power supply. VCA option available. 24ch-\$52,799.

MIDAS

EVI Audio (Aust) (02) 9648 3455

XI 200 available in 16, 24, 32, 40, 48 and 56 inputs plus full range of extenders. Four band swept EQ with variable 'Q' on mids, 8 auxiliaries, 8 sub groups. Matrix outputs. Stereo modules and Midi Mute available. Available with touring flightcase, dual power supplies. VCA's fitted as standard. Fully buss linkable with all other Midas consoles. \$99,000.



BASF National Tracking Guide

ARTIST	PRODUCER	ENGINEER	PROJECT
New South Wales			
A#Sharp Jeff Cripps (02) 9534 4440. 24 Trk 1"			
Mad Hatter	Jeff Cripps	Jeff Cripps	Cassette
John Ng	Jeff Cripps	Jeff Cripps	Christian CD
Alberts Studios Leesa (02) 9953 2544. SSL Studio, 48 Trk			
The Whitlams	Rob Taylor	Rob Taylor	Album
Helena	Steve Svitek		Debut Album
Frenzal Rhomb	Donnell Cameron	Donnell Cameron	Album
Robyn Loau	Anthony Copping	Mike Ross	Album
I Believe In Aliens	Barry Andrews	Sam Horsburgh	Debut Album
Da Da Spastic	Rob Taylor	Rob Taylor	Album
Aphek Studio Greg Dixon (02) 9876 8170. 16 Tracks to 1" analogue			
Cyan Brass	Cyan Brass	Greg Dixon	Album
Greg Dixon	Greg Dixon/Doug Williams	Greg Dixon	Album
Martin Reeve	Martin Reeve	Greg Dixon	Album Pre-Production
Steven Tonge	Steven Tonge	Greg Dixon	Demo
Conspiracy Theory	Greg Dixon/Doug Williams	Greg Dixon	Album
Dave Challinor	Dave Challinor/Greg Dixon	Greg Dixon	Demo
Audioscapes Jim Blackfoot (02) 9550 5205. 16 Trk. Digital Post Production			
Abroad & 2 Men	Linda Nagle	Jim Blackfoot	Cast Album
Greedy Smith	Greedy Smith/Jim Blackfoot	Jim Blackfoot	Vocal Tracking
Tony King	Jim Blackfoot	Jim Blackfoot	Film Soundtrack
Burbank	Roz Phillips	Jim Blackfoot	Animated Feature
NSW AMES	Darryl Hilton	Jim Blackfoot	Training Tapes
IDS	David Hayes	Jim Blackfoot	Dialogue Recording
Bush Tracks Ruth Miller (066) 891 290. 24 Track Recording & Multimedia Studio			
D. Johnson/Roughscales	Doug Johnson/Dave Highet	Dave Highet	Album
Charing Cross Studio David Sykes (02) 9387 8362. 24 Trk. Analogue - Neve, Studer, Analogue etc.			
Bag-Ben Nightingale	Greg Wales	Greg Wales	Album Track & Mix
Juliana Hatfield	Nic Dalton	Peter Jones	Tracking
Sneeze	Nic Dalton	Michael Piltz	Album Mixing
Ben Lee	Peter Jones	Peter Jones	Vocal Tracking
Violettine	Wayne Connelly	Wayne Connelly	Album Track & Mix
Tractor	Wayne Connelly	Wayne Connelly	Album Track & Mix
Crystal Clear Studios Dave Tozer (02) 9684 1152. 24 Trk. Dig. (Adats), 32 Ch. Console			
AD	Dave Tozer	Dave Tozer	Album
Ram	Dave Tozer	Dave Tozer	Demo
Barnstorming	Dave Tozer	Dave Tozer	Demo
Lonnie Lee	Lonnie Lee/Dave Tozer	Dave Tozer	Album
Digging For Bone	Dave Tozer/Band	Dave Tozer	EP
Abstract Breed	Dave Tozer	Dave Tozer	EP

ARTIST	PRODUCER	ENGINEER	PROJECT
Damien Gerard Studios Elia (02) 9660-8776. 2" 24 Trk., 1/2" 16/32 Trk.			
Fini Scad	Fini Scad	Russell Pilling	Pre-Production
Hummer	Hummer/Jordan Bach	Jordan Bach	EP
Posies	Nic Dalton	Jordan Bach	Single
Suburbia	Paul Miskin	Anthony Kaub	Film Soundtrack
Andy Hulme	Andy Hulme	Russell Pilling	Single
Austen Tayshus	Austen Tayshus	Russell Pilling	Voice Overs
Darling Harbour Studios Ike (02) 9211 1474. 24 Track MCI 32 Channel Automation			
Indifference	Band	Sucka Fish	Demos
Ash Wednesday	Band	Sucka Fish	Overdubs
Joe Egg	Daniel Denholm	Ben	EP
Wishing Tree	Band	Sucka Fish	Demos
Hobo Posh	Ike	Sucka Fish	Album
Midnyt Sun	Gordon Hunter	Sucka Fish/Mike Stavrou	EP
David Hinds Recording Studios David & Lyn Hinds (065) 811 235. 16 Trks of DA-88, 02R Console			
Balance	David & Lyn Hinds	David & Lyn Hinds	CD Tracks
Festival Mastering Catherine Knapman (02) 9395 8070 Sonic Solutions			
Various	William Bowden	William Bowden	ABC Music Compilation
Shield/Tracey Arbon	Greg Hopping/Kyle Neven	William Bowden	Single
Disaster Dora		William Bowden	Album Mastering
Ultra Love Machine		William Bowden	Single
P.Inc		William Bowden	Single
MDS Compilation		William Bowden	"Homebrew II" Album
Festival Studio Catherine Knapman (02) 9395 8070. MCI or Studer Analogue or Mitsubishi Digital			
Duncan James	Garth Porter	Ted Howard	Demos
Machine	Roger Sommers	Roger Sommers	Album Tracking
Frenzal Rhomb	Donnell Cameron	Mark Thomas	Album Tracking
Fresh Music	Ken Francis	James Cadsby	TVC for Indonesia
Arizona Productions	Peter Kaldor	Brent Clark	TVC for "Dymocks"
Infinity Digital James Novak (02) 9672 3513. Pro Tools, Lexicon, Yamaha etc.			
Mighty Morphin P.Rangers	Lorrie D'Ercole	James Novak	Cantonese ADR
Strange Horizon	Band	James Novak	EP Tracking
Mary's Secret	Band/James Novak	James Novak	EP
Katherine	Stefan Novak	Stefan Novak	Album Pre-Production
JMF Sound Studio Fran Esther (02) 9790 4097. 32 Trk. 1" Digital, 24 Trk. 1" Analog			
Reflections	Band	Ralph Esther	CD Album
James Long	James Long	Ralph Esther	CD
Double Shot	Band	Simon Meli	Demo

Continued on
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BASF YOUR MUSIC IS
SAFE WITH US

new from K&M

The "unbreakable"
microphone clip

Industry
standard
microphone stands

new models plus
better pricing



flexible rubber top
brass thread insert
free 3/8" adaptor

Desktop
rack
stand



new 19" 8ru stand
for table top use



& trolleys, music &
instrument stands and
more. The availability
of spare parts for
many models protects
your investment in
the event of loss or
breakage. Designs are
under continual review
& any improvements
that can be identified
are implemented.



stands
tall
short
round base
folding
table
banquet
floor
overhead
budget
premium
black
silver
booms
long
short
telescopic
fixed length
budget
premium
black
silver

lots more models...call for the full story

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email: sales@trc.com.au

Write in Reader Service Number: 132

Panasonic® sv-3800

Professional Digital Audio Tape Deck



Main Features

- Exceptional sound quality 20 bit equivalent DAC system
- High performance A-D one-bit converters
- Multiple digital interfaces AES/EBU, IEC958, Optical
- Front panel selection of all I/O formats
- L/R independent volume control
- Single program play
- Includes infrared remote and 8 pin parallel remote terminal

STUDIO
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ACN 003184503

Write in Reader Service Number: 171



BASF National Tracking Guide

ARTIST	PRODUCER	ENGINEER	PROJECT	ARTIST	PRODUCER	ENGINEER	PROJECT
Megaphon Guy Dickerson (02) 9550 6576. 24 Track Analogue & Digital				Humpback	Tony Wall/Band	Tony Wall	Demos
Hot Rollers		Paul McKercher	Album	Dave Wilkens	Craig Portells/Band	Craig Portells	Album Tracking
Chad Wackerman		Guy Dickerson	Album	Reg Cribb	Tony Wall/Band	Tony Wall	EP
The Governors Family	Alan John	Guy Dickerson	Soundtrack	Queensland			
A Winters Tale	Alan John	Guy Dickerson	Soundtrack	Digital Paradise Studios Ian Peters (07) 5527 0722. 32 Track Digital			
Mirage Gerry Nixon (02) 9211 3915.				Manpower	Ian Peters	Ian Peters	Show Tapes
SMLXL	Jason de Wilde	Jason de Wilde	Album	Maggie Britton	Maggie Britton	Ian Peters	Demo Tracks
Frankenberry	Jason de Wilde	Jason de Wilde	EP	Adam Harvey	Lee Conway	Ian Peters	Demo Tracks
Bluebottle Kiss	Jim Whitten	Jim Whitten	Album Mix	Various	Barry Pearson/Jan McGregor	Ian Peters	Corporate Video Voiceovers
Mental As Anything	Mark Thomas	Mark Thomas	Album Mix	Lisa Ryan	Barry Pearson	Ian Peters	Jingle
Greedy Smith	Jim Blackfoot	Mark Thomas	Album Mix	Vandersound Studios Eric Vandersande (07) 5546 8100. 24 Trk. ADAT/XT, HDR, 02R, CD-R, Mastering			
Bob Downe	Karim Sai	Karim Sai	Pro Tools Comp./Mix	Wintersun	Eric Vandersande	Warwick O'Neal	CD Mix
Nu-town Greg Hopping (02) 3516 3306. 32 Trk. Digital, 16 Trk. Analogue				Scott Patterson	Eric Vandersande	Scott Patterson	Album Tracking
Lisa Wass	Greg Hopping	Greg Hopping	Single	Matt Soome	Eric Vandersande	Eric Soome	Demo
Nick "A" Smith	Nick "A" Smith/Greg Hopping	Greg Hopping	Single	Memphis Kings	Eric Vandersande	Warwick O'Neal	Demo
Daydream	Daydream/Greg Hopping	Greg Hopping	Single/Remix	Jan Brooke	Eric Vandersande	Eric Vandersande	Relaxation Album
Boyz With Toyz	Alexander/Greg Hopping	Greg Hopping	Single	Ben Aumon	Eric Vandersande	Ben Aumon	Demo
Daydream	Daydream	Mark Worrall	Single	South Australia			
Shield	Nevin/Greg Hopping	Greg Hopping	Single	Agro Fish Studios Julie Raynes (08) 8223 7211. 24 Track Video Sync, Hard disk recording, midi & Computer			
Paradise Studios Jason Lea (02) 9357 1599. Custom Console, Studer A800, Valve Outboard				Mixdown			
Fireign	Billy Thorpe	Greg Clark	Mixing	The Music Shop	Wilson Maine	Andrew Bayfield	TV show for children
Bobby Gebert	John Morrison	Michael Henshaw	Live Album	Creative Forrest Prod'ns	Mike Forrest	Andrew Bayfield	Jingle
Bob Barnard	Kleon Dennis	Jason Lea	Live Album	Sylvia Legowski	Sylvia Legowski	Andrew Bayfield	Demo
Lee/Tania Kernaghan	Garth Porter	Ted Howard	Football Themes	Trevor Raines	Trevor Raines	Steve Fieldhouse	Demo
Ian Cooper	Ian Cooper	John Frohlich	Album Tracking	Voodoo Bunyips	Voodoo Bunyips	Julie Raynes/Andrew Bayfield	Demo
Cruel Sea	Band/P. McKellar/D. Denholm	Phil McKellar/Daniel Denholm	Tracking	Mixmasters Productions Mick Wordley (08) 8278 8506. 24 Track 2"			
Paul Bryant Mastering Paul Bryant (02) 9748 0222. Mastering Suite				J.B.E.	Chris Davies	Steve Fieldhouse	Album Mix
Unusual Addiction	Warwick Marsh	Paul Bryant	CD Master	Lachlan McLeod	Lachlan McLeod/Mick Wordley	Mick Wordley	Album
Thunderwear	Vladimir	Paul Bryant	CD Master	Blind Dog Taylor & The Healers	Band/Mick Wordley	Mick Wordley	EP
Brad Fury	Jeff Cripps	Paul Bryant	CD Album	Jeneah	Band/Mick Wordley	Mick Wordley	EP
Marcus	M. Nassner	Paul Bryant	CD Album	Reynolds & Love Recording Studio Nick Love (08) 8410 3044. 16-24 Tk. Digital, 16 Tk. Analogue			
Dogswamp	The Count	Paul Bryant	CD Master	Rob Guest	Carl Doy	Doug Jane	Album
Powerhouse Studios Doug Henderson (02) 9318 1220. 32 Input Neve Console 24 Trk. Studer A800				Adult Toys (Zep Boys)	Ray Axisa	Nick Love/Editt Sikorski	CD Single
Freesia Wooney	L. Berger/Doug Henderson	Doug Henderson	CD Single	Stolen Waters	Band	Nick Love/Louis Panayiotou	CD Single
Solar Records	Dara	R. Pilling	CD Single	Captain Pyjama	Band/Louis Panayiotou	Louis Panayiotou/Nick Love	Album
Mystery	R. Pilling/Band	R. Pilling	CD Album	Hobsons Choice	Band	Eddie Sikorski	EP
Dark Order	Band	G. Duffield	CD Album	King George the VII	Nick Love	Nick Love	Album
PSI-Core	Band	G. Duffield	CD EP	Victoria			
J. Rowles	L. Berger/Doug Henderson	Doug Henderson	CD Album	Big Beat/Equinox Studios John "Shadow" Toth (03) 9898 5815. 16 Tk. Analog, 8 Digital 32 Channel Auto			
R & R Recordings Robert Zimola (02) 9672 4494. 16 Tk. 1"				Amanda	Amanda/John Toth	Ben Williams	CD
CJM	Mike Kerin	Robert Zimola	Album	Absolute	Band	Ben Williams	Demo
Kare Aust.	Robert Zimola	Robert Zimola	Corporate Motivation	Herdverse	Band	Dave Borgeest	Demo
Q-Stik	Q-Stik	Robert Zimola	Demos	Slider	Band	Ben Williams	Demo
David Cazalet	David Cazalet	Robert Zimola	Album	Dave Close	John Toth/Ben Williams	Ben Williams	CD Demo
Rockinghorse Recording Studios Grant Hilton (066) 884 131. 32 Tk. Analogue, 32 Tk. Digital				C.O.D.	Band/John Toth	Ben Williams	CD Demo
Sledge Hog	Keith Williams	Keith Williams	Demos	C'est Ca Recording Norman James (03) 9419 1506. Automated 24 Track Digital			
Dog Collective	Keith Williams	Keith Williams	EP	Bernard Bolan	Norman James	Norman James	Album
Dream Killers	Andrew Baldwin	Andrew Baldwin	Album	Thrush	Girl Zone Records	Genn Coath	Girl Zone III Comp.
Orlando	Keith Williams	Keith Williams	Techno Track	Bleach	Girl Zone Records	Genn Coath	Girl Zone III Comp.
SkyLab Studio David Russell (02) 9310 4774. 32 Track Digital Automated				Tell	Genn Coath	Genn Coath	Demo
Flapjack	Dylan Foster	David Russell	EP	Alison Durbin	Ray Giles	Norman James	Album
Drug	Jeff Stapleton	David Russell	Single	Crystal Mastering Joe Carra (03) 9326 2318. CD Mastering			
Rebecca Renei	Mike Bukowsky	David Russell	Album	Plasticine	Band	John Ruberto	CD Mastering
Slewfoot	Dave Weir	David Russell	Album	Maria Forde	J. Durr/R. Dillon	John Ruberto	CD Mastering
Street Ruffian	Band	David Russell	Demos	Faid	Band	John Ruberto	CD Mastering
Rotation	Steve Kenedy	Dave Russell	EP	Superheist	Richard Norton	John Ruberto	CD Mastering
Sony Music Studios Ross A'Hern (02) 9332 0320. 24 Track, Pro Tool Edit Suite, AVID Edit Suite				Tess McKenna	Band	John Ruberto	CD Mastering
Flyspeak	Mathew Sulos	Simon Tonks	Album	Kiril	Kiril	Joseph Carra	CD Mastering
The Hunting Party	Michael Napthali	Jeremy Allen	Demos	Hot House Studio Chris/Craig (03) 9525 3703.			
Strandad	Kai Brown	Simon Tonx	Album	Snout	Band/Greg Wiles	Greg Wiles	Album
Elizabeth Lord	Elizabeth Lord	Ross A'Hern	Recording Tracks	Kiss Music Recording Studios Paul Kosky (03) 9827 1500. SSL Console, 48 Trk. Digital, 48 Trk. Analogue			
Ed Hughes Quintet	Ed Hughes	Ross A'Hern	Album	N.I.L.	Paul Kosky	Paul Kosky	Album
Mark Taylor	Mark Taylor	Ross A'Hern	Album	Dog Buoy	Kalju Tonuma	Kalbaby	Album
Sound Level Studios John David (02) 9552 3200. 16 Track DA-88 Digital				Ros Ingles	Ros Ingles	Doug Brady	Score
Cactus Child	Cactus Child	John Soane	Demos	Earthmen	Daniel Denham	Daniel Denham	Single
Sean Lowry	Sean Lowry	Sean Lowry	Demos	Newmarket Studios Ben Hurt (03) 9329 2877. 24 Track Studios 1 & 2			
Hidden Agenda	Nathan Sykes	Jorden Briebach	Live To DAT	Xenos	Rob Bester	Chris Corr	Album
Holly Go Lightly	Darren Fenton	Jorden Briebach	Demos	Laurie Arthur	Laurie Arthur	Ben Hurt	"50 Classic Feels"
Bondi Cigars	Allen Britton	Jorden Briebach	Demos	Jochen Schubert	Jochen Schubert/Ben Hurt	Ben Hurt	Album
Sticky Fingers	Quenton Smith	Jorden Briebach	Demos	Stephanie Clifford	Ben Hurt	Ben Hurt	Track for Album
Soundwarp Meredith Brooks (02) 9905 7144. Mastering				C. Skubizewski	C. Skubizewski/BMW	Chris Corr	TV Advertisement
Soul Kitchen	Brad/Slav	Meredith Brooks	Mini LP	Lucas Michailidus	Lucas Michailidus	Chris Corr	Album
Bernie Lynch	Bernie Lynch	Meredith Brooks	Australian Fashion Week	Sound Around Mobile Sound Studio Trevor Cronin 019 439 721.			
Blatherskite	Tim Lim	Meredith Brooks	CD Album	Radio Birdman	Band	Trevor Cronin	Live Recordings
Todd Keightley	Todd Keightley	Meredith Brooks	Album	Ruby Hunter	ABC TV	Trevor Cronin	Songlines Documentary
Alice Ashley	Alice Ashley	Meredith Brooks	Demos	Hybrid Audio	Goold/Millen	Trevor Cronin	Soundtrack
Frank	Brandon	Meredith Brooks	Mini LP	Rip Off	Wozza	D. Eng. Paul	Live Recording
Trackdown Digital Marcus Leadley (02) 9550 6890. 3 x 12 Track Pro Tools, 24 Track ADAT				Studio 44.1 Mark Feener (03) 9701 5737.			
Yoram Gross Film Studio Yoram Gross		Katrina Schiller/Tim Ryan	Animated Series	Jellybugs	Band	Mark Feener	Album
Barry Weston		Jeremy Adams/Katrina Schiller	Mix	Valhalla	Band/Mark Feener	Rob Mitchell/Mark Feener	Album
Lee Cutelle		Katrina Schiller	Prog. Single/Record	Aluyasan	Band/Mark Feener	Mark Feener	Remix
John Hawkesworth		Katrina Schiller	Music	Gods Own	Band/Mark Feener	Mark Feener	Album
Thelma Houston	Iva Davies		Vocals for Single	Studio 52 Paul Higgins (03) 9417 7707. Studio A - 32 Tk. Studio B Adat 24 Tk			
Troy Horse Micky Levis 0419 254 505. "Tactile" 2" 24 Track				Carols By Candlelight	Peter Cupples	Trevor Carter/Paul Higgins	Live CD Mixing
The Wiggles	Chris Brooks	Chris Brooks	Soundtrack	"Road To Nhill" S/Track	Gecko Films/Elizabeth Drake	Traver Carter	Soundtrack
D.I.G.	Scott Saunders	Dan Griffin	Tracking				
Front End Loader	Iced Bobo	Dan Griffin	Concept Album				
Peter Baxter	Dave Steel	Russell Pilling	Album				
Beatnix	Band	Dan Griffin	Jingle				
Dusted Eye	Rusty Marks	Tom Kazas	EP				
Velvet Sound Recording Studios Dave McCunn (02) 9264 3420. 24 Tk., 32 Ch., 2" Analogue							
Equals Three	Tony Wall/Band	Tony Wall	EP				
Waldo Garrido	Frank/Band	Frank Kerestedshjian	Album Tracking				
Skunkhour	Tony Wall/Band	Tony Wall	Re-Mixing				



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ARTIST	PRODUCER	ENGINEER	PROJECT
Supremacy	Trevor Carter	Trevor Carter	Tracks for CD
Tunari	Trevor Carter	Trevor Carter	New Album
Cherie Marian	Cherie Marian	Rowan Jarl	CD in Studio B
Arabesque	Band	Trevor Carter	Track for NuMusic 13
Studio RBX Mark McDougall (03) 9429 6199.			
Peter Cupples	Peter Cupples	Mark McDougall	Demos etc.
Wombat Road Studio Barrie Clissold (03) 5145 4204. 16 Tk. Digital, 16 Tk. Analogue			
A. Robinson	A. Robinson	Barrie Clissold	Album Tracking
Jill Meehan	Jill Meehan	Barrie Clissold	Demo Tracks
B. Williamson	Barrie Clissold	Barrie Clissold	Demo Tracks
B. Suter	B. Suter	Barrie Clissold	Album Tracking
R. Streckfus	Barrie Clissold	Barrie Clissold	Demo Songs
Gavan Arden	Gavan Arden	Barrie Clissold	Album

Western Australia

Bonsai Recording Studio Tom Thorpe (09) 9246 4408. 24 Track			
Kay-Redman	Tom Thorpe	Tom Thorpe	Jingles
Studio Trax	Tom Thorpe	Tom Thorpe	Demo
Mike Blake	Tom Thorpe	Tom Thorpe	Album
T. Pergamalis	Tom Thorpe	Tom Thorpe	Album
Planet Studios John Villani (09) 9382 2211. 48 Dash, 32 Pro Digi, 24 Tk. Analogue SSL			
Lyndsay Hammond	Glen Goldsmith	John Villani	Album Tracking
Savannah	Peter Thorburn/John Villani	John Villani	Album Mix
Sonny Morgan	Sonny Morgan	John Villani	Single Mix
Craig Hardie	Craig Hardie	Les Williams	Album Tracking
Kerri Anne Cox	Gary Ridge	Les Williams	Single
Graham Lathwell	Graham Lathwell/Les Williams	Les Williams	EP
Poons Head Rob/Sam/Bush (09) 9339 4791. 48 Track Studio			
Cinema Prague	Rob Grant/Band	Rob Grant	Mastering
Spank	Rob Grant	Rob Grant	Mixing & Mastering
RTRFM	Graham Hill	Rob Grant	Mastering
Graham Dickenson	Rob Grant	Rob Grant	Album
Not Enough Rope	Chris Dickie	Chris Dickie	Album

ARTIST	PRODUCER	ENGINEER	PROJECT
Tropo Sound Mick Connolly (08) 9192 2394. 24 Track Dolby S			
Mick Videlli	Band	John Villani	Demo CD
Peter Bibby		James Edwards	Demo
Warman Band	John Crooks	John Villani	Debut Album

Northern Territory

Caama Music Steven Tranter (08) 8952 9205.			
Terrasphere	Alan Murphy	Stan Satour	Mixing
Warren Williams	Stan Satour/Warren Williams	Stan Satour	Album Recording/Mixing
Black Storm	Stan Satour/Steven	Stan & Steven	Album Mixing/Recording
Chrysophase Band	Steven	Steven	Album
Kakadu Studios Ken Hutton (08) 8941 1344. 24 Tracks			
Rising Wind	Ken Hutton	Ken Hutton	Album
Robin Green	Ken Hutton	Ken Hutton	Part Album
Mimi Band	Ken Hutton	Ken Hutton	Album
Joe Cumbula	Ken Hutton	Ken Hutton	Album
Saltwater Band	Ken Hutton	Ken Hutton	Songs
Masters Studio & Production Lindsay Masters (08) 8932 1754.			
Various	Lindsay Masters	Lindsay Masters	Hot Top Country Album
Peter Ciriotis	Peter Ciriotis	Lindsay Masters	Greek Music Collection

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Savage Garden and Screaming Girls

Good clean fun

Oooohh, I think I'll become a sound check groupie. This is definitely fun, sitting in the beautiful, picture-palace style Enmore theatre, watching Savage Garden get ready for tonight.

Guys with stubble and mobile phones are scurrying around, other guys with TV cameras on their shoulders are hovering, the photographer is getting the brief on where he can't stand, the tour manager is managing.

Darren is chatting to friends and crew, looking very pretty, sweet, and young. Two girls are giggling over WHO magazine.

After a while, the band gets up on stage and the sound and light crew work on all those little details. Like the back up singer's monitor, the light right at her feet, the moving light that isn't moving.

This is one of those tricky tours: eleven shows, nine venues, nine production companies, eight different consoles, six speaker systems, four states. The crew have been working hard to keep up the pace of different standards and equipment between states.

The enthusiasm around the band is palpable. Everyone suspects they might be on the verge of a phenomenal phenomenon. The boys are sweet, and immensely talented. It all seems so natural. Every song feels like a hit. Darren has a stunning, theatrical thrilling voice, the vocals and harmonies are divine, over the arrangements and complex layers created by Daniel.

During sound check, Darren is relaxed, and amiable. When a mobile phone rings on stage, he says, "It's the Post Office. Your sea monkeys died." A joke which he thinks is hilarious, and so do I.

At night, Darren becomes the quintessential rock star, aqua and pink lights reflecting off his tight black shiny trousers.



Photo: David Anderson

He moves eloquently, and bends down a lot to touch the outstretched hands of the girls, a gesture which drives the entire audience crazy. I haven't heard such great girl screams and swoons since early Beatle footage.

Sound

The sound, mixed by Glenn Inglis, is rich and complex, with a lot of respect for the vocals. "Last night the sound was pretty good," Inglis says. "Savage Garden has got to be clean, clear, and punchy. There were a lot of people from overseas, TV, promoters, and management. It's all eyes on this band at the moment, so we had to go out and spend a few dollars, and make sure we put a good sound system in."

"I'm quite happy with it, but I still need to try lots of vocal mics. They're good, but there are a couple of bits in the show where I'd just like to find the ultimate. I like trying different mics, and finding what's right for each thing. It's ok just putting up what you know from experience, but you've got to try and make it better. With technology now, there's so much out there."

I was bowled over by Darren, though I was too dignified to scream, and by the back up singers (the WHO readers). "They come from the Brisbane pub scene, four

shows a night, which I think is good training to be able to play day in, day out," Inglis says. "The band has progressed from day one. The first couple of days were a bit iffy there."

"It took a few days to find stuff. There are eight channels of keyboard, coming out of the rack. There is a lot of stuff coming out of the samplers. We've worked on tidying up edits, and getting it smoother. The band has come together really well. The crowd noise is just amazing! I haven't heard a noise like this for years!"

Inglis has been stretched trying to make a great show every night, in a different venue, with different gear. "Sometimes you turn up, and the house guy, or the house equipment, are just nowhere up to standard. Sometimes the gear's ok, but it's just such poor maintenance, it's a pile of rubbish. So, we've had a few fun days on this! We're going, 'It'll work soon, they'll get it working soon!' And then you go and actually put your head in something and make it work for them. It's not really part of the job, but it's ok."

"Some of the stuff has been really good, like what we hired last night from a company called Norwest. The Soundcraft Europa is their main console. In Melbourne it was a Yamaha, Adelaide a different Soundcraft. That was the fourth Soundcraft console I've seen in ten days."

"Some people don't like the Europa, because it doesn't fit across the truck, and it's



Matt Arthur

just too big. The Yamaha is about a foot shorter, you can actually reach each end!

"Gearwise, it's a bit of a task for us. I've got a bee in my bonnet about it. I wish that when these companies go to something like Entech, they would actually ask each other, 'So what are you thinking about buying?' That they would look at what all the international and local touring guys want. I tour around a lot, and there's a lot of nice gear, but there are standards you expect from the touring guy in America, or the better acts around the country.

"I just wish you could get the same gear in each town, so you could get your little book out, and mark it all up the same. It gives you a better starting point. In each different state, Matt has three different types of light. They move differently, they have a slightly different colour, it's crazy!"

Michael Davenport, tour manager and Roger Sommers, LA Producer



Lights

Matt Arthur, LD, has done a fantastic job. The stage has several vertical trusses of lights scattered around, and a central lycra backdrop which takes projections, framed between two black drapes. The lights are exciting, but not dominating. There are dramatic sweeps and shafts onto the audience. The tone is just right for this show.

"Savage Garden are basically a dance/pop band," Arthur says, "so I tried to get a nightclub feel, but with a lot of imaging. Because the band are so popular, when the girls see them in silhouette, they love it. If you can create some atmosphere with those guys, and build the tension, then it gets the crowd more and more into it. I went for big strong colour looks, a cross between The Cure, and Pink Floyd, with strong pinks and greens and blues.

"Tonight was the first time I could get to the audience, because it was the first time I had some moving lights. Whenever I hear *Truly*, their big ballad single, I think of big rotating Gobos out into the audience.

"My right ear is deaf from the girls screaming, it was so loud!"

The rig and the lighting had an appealing lack of symmetry. "There was a bar of

mediums, which is pure wash, and then behind that was a bar of ACLs, open white shooting through the front line. Midstage there was a bar each, but one moving light on one side. One light on the floor behind that, and two on the back truss. It was just all scattered around, it's dance club. It's not meant to be symmetrical and pretty. It's meant to be beams of light shooting through people and coming from the floor and going out into the audience. The truss of lights behind the singers were staggered heights, one was 15' and the one next to it was 8'. So instantly you've got this big height difference, high and low, and different beam angles.

"I wanted to throw away symmetry, and do something bizarre, and a bit off the wall. At the same time, my advice to myself was 'Keep it simple, stupid.' Use the moving lights and robots as effects. Bring it in for every couple of songs, and face it out. Don't try to do cue to cue stuff, it just doesn't work, especially in a show that's not programmed properly. You're taking pot luck when you hit that button whether it's going to work or not. Most of the time last night, it worked!"

But with so many different venues, it hasn't been easy. "We've been starting from scratch, setting up the show each time. It's been really difficult to try and find some normality, and regularity in gear. We started in a grunge pub in Perth, then to a concert hall. The third was a really bad venue, so I couldn't do much. Then we went to the Thebarton Theatre in Adelaide. That was for one night and we didn't get the Robocolors working until after the doors opened! Then we were at the Palace in Melbourne, with yet again another house system, plus hired extras."

The big issues for Arthur and Inglis, is the lack of regularity of gear through the states. "You can't design something, fax it off to all the companies in different states, and know that you'll get the same show wherever you go," Arthur says. "That's the hardest part. Other than that, I had the first show I was happy with last night."

They're off to Newcastle, Brisbane and Ipswich in the next four days. Arthur has been LD for



Glenn Inglis

Tommy Emmanuel, Boom Crash Opera, and others that he can't remember.

Arthur likes Robocolors. "They're a fantastic light, because you've got so many colour opportunities, and the colours are really brilliant. They're small and portable and they work."

He was using a Jands Hog for the Emmore show. "It's quite a good desk once you get yourself in the starting position. The set up process is sometimes a little bit long. But once you start, it's pretty easy to rush along and do some quick programming on it, if you set it out properly. It's a good console, certainly easy to operate, once you get your head around it. It's extra hard, if you're not using the same gear every day, setting up different parameters, and different positions for the lights. But that's not the console's fault."

His final word of advice: "Gear that works, and some sort of standard between the states. Glenn's got the same comments. At least with a 2A, you can stack it, and centre it, then tune it up. With a light show, you've got to make it work then focus it, program it, and stuff. It's pretty hard."

The LA take, and the vocals

Roger Sommers, chief engineer at Royaltone Studios, in LA was over for the show. He has done studio work with Don Henley, Van Halen, and more.

"I thought the sound was good," Sommers said "I would like to have heard some more things, but the space itself was a good sounding space, which is so important. They did a very nice job.

continued on page 53



LIVE's live sound

Julius Grafton reports

Usually a newly famous band have a newly famous sound engineer too, and for this reason I was keen to go and see the production team during the LIVE concert tour. New sound engineers can be either precious twat or alternately fresh and invigorating. Funny enough I found a durable professional at the FOH mixing helm instead, as ex patriot Australian Jon Lemon is the sound engineer for LIVE in 1997.

When a band suddenly starts to 'happen', (and they happen fast these days) all sorts of internal machinations take place. Record company people start to influence the agenda, sometimes the management team changes. LIVE were in the middle of a theatre venue tour in the USA when Lemon got a call in January as it seems the original sound engineer was to be replaced.

Lemon was by chance at home in County Galway on the west coast of Ireland, looking forward to a break after touring with The Cure. Taking some time to consider, he decided 'why not?' and headed back on the road.

"I was supposed to start in Boston but the plane landed two hours late. I went straight to the theatre and sat through the show while the support engineer mixed Live with the help of Howard Page". (Showco VIP in charge of everything and also an ex-pat).

As it was Lemon sat through 2 shows before taking control, and found it refreshing because every act he worked for in recent years has had extensive pre-production rehearsals. Here he was, thrown in cold, mid tour.

The theatre tour of the USA was a warmup for the next phase, which was the Australian arena tour. Then it's on to

Europe for a festival tour.

Lemon specified a Turbosound Flashlight PA system, which was supplied in Australia by ACP (Australian Concert Productions). They own a Floodlight / Flashlight combination, and also have a full complement of under hung high packs and under hung low mid packs. These allow you to tailor your hanging array so as to reach the very close up front rows.

Turbo have a weird policy regarding amplifiers.

If you buy Flashlight speaker cabinets (so known because they are 'hi-Q', meaning they have a tight dispersion pattern; 25° x 25°) then you buy BSS amplifiers. No amps - no Flashlight. However you can choose your own amps for any Floodlight cabinets you buy. The Floodlight has a wider dispersion, (50° x 25°) but otherwise is identical to the Flashlight.

Turbo apparently walked a tightrope with Britannia Row in London who had a major role in developing the Flashlight for the UK market. The amplifier exclusivity is related to this, and has cost Turbo sales.

ACP chose to power their Floodlights with Crown MA amps, (MA 5000Z and MA 3600Z) and of course have the BSS EPC-760 amp racks for the Flashlights too. Most of the rig is Floodlights, supplemented with Flashlights to project to those distant rear seats.

It works.

I first heard a Flashlight system in the Sydney Exhibition Centre with Cliff Richard, the system was from Oceania in Auckland New Zealand. At that time I walked the arena and went to row Z at the very top. The high frequency projection was very good.

Before the LIVE concert I came across colleague Greg Weaver, sound engineer and



Jon Lemon

net master - he was there to fix Lemmon's laptop for internet access. Greg offered to report on the sound, so I could get a second opinion.

He was of the view that the system dispersion was consistent as he walked to row Z. It was all there and he didn't notice the high frequency projection - which I hadn't commented upon beforehand. He compared it very favourably against the standard S4 system so typically used in the S.E.C.

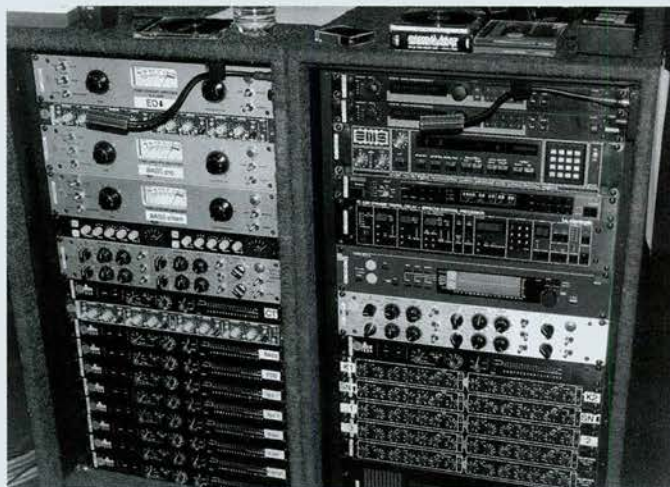
As to the mix itself, he was ambivalent as was Connections' Sharon Miceli who commented that in row P it was not quite loud enough in general terms - she could hear the people around her.

Lemon had a Midas XL3 mixer, although he has specified an XL-4 for the next tour. "It's an old friend, with a nice layout. On this console the eight stereo (effects) returns are in the middle, whereas they normally are at the end of the console on a 40 channel version".

When he started the tour, Lemon found himself surrounded by effects racks, ever the crutch of the younger sound engineer. They went back to Showco (who were providing a Prism PA system in the USA) at the first opportunity. In Australia he had two racks.

Summit Audio tube processors (distributed by Sound Devices in Sydney) feature very highly on Jon Lemon's list. "I wouldn't leave home without it!" TLA 100A tube levelling amplifiers (limiters to you and me) were used on the main vocal of Ed Kowalczyk and on the bass guitar. Summit's EQF-100 parametric equaliser was used on the kick drum to bring 'that tube EQ' to the thing. The kick had my favourite kick microphone in it - a Beyer M88.

Effects also included a pair of Lexicon



ROUGH RIDERS

Food! Now I know I've mentioned this before, but you have to admit it can become an obsession when away from home. I've seen entire crews break into a sweat (not from hard work) and start trembling if they think they won't be able to get a supply of their favourite foods. I call this "Boarding School Syndrome" or BSS for those in the know. You wake up at 3am and you've got a craving, for me it's always Mars Bars. My Mum used to send me a cake tin full of them at the start of every school term. I could never make them stretch beyond the first week. Then the nightly sweats would begin and to this day the sound of an empty cake tin being rattled can bring on a fever.

Touring is like being at Boarding School when it comes to food, you're in a foreign place and your familiar corner shop is a long way away. This desire for a certain unavailable food can severely hamper the quality of work being undertaken. I once toured with a lighting tech who was addicted to Jelly Babies. We were on a long tour in fairly remote places, he'd been smart and packed a major supply in his backpack. Unfortunately our luggage went astray (we'll deal with this issue another time) and within twenty four hours he'd polished off his emergency supply.

In the morning I discovered that he'd spent the night making jelly bean gobos and had put them in about 30 profiles, all projected onto the cyc in bright Jelly Bean colours. It was a sad sight.

Tim Tams always seem to be a popular addiction for people. Again I think it's got some tie-in with childhood. Some brave people try and fight these addictions, but my word of advice is never go touring with anyone who's trying to go cold turkey from a food addiction, particularly if it's Tim Tams.

I'm a bit concerned about Ben Elton at the moment. He's out here touring and I was checking out his *Rider* the other day just to see if comedians eat the same kind of food the rest of us do. He wanted the usual sandwiches with meat and cheese, fruit, bottled water etc. Nothing alarming there. Then I come to this little gem and I know I've spotted a Tim-Tamaholic trying to dry out.

"A nice sweet treat surprise like a Tim Tam - but only ONE!!!!!!"

Who does he think he's kidding? Anyone can clearly see that this is a cry for help. The poor man is obviously hopelessly addicted and can't trust himself to stop at a moderate one.

Rufus B.

Savage Garden

continued from page 51

"For an act like that, the most important thing is to be able to hear the vocal, and you could hear the vocal. That's what most people tune into. There was a study done at Johns Hopkins University in the 70s, and people basically listen to the vocal, and the beat. They don't tune into anything else, unless they're interested in music specifically."

This was the first live show that Sommers had seen here. "It seems like everything is on a smaller scale, probably because there is not as much money to be made.

"But there are a lot of very talented people in this country, I thought it was very well done. Everybody seems to be very knowledgeable about what they do.

"The US is a rich breeding ground for audio industry people. There's 15 or 20 huge multinational touring sound companies based out of the US. And we have the cream of the crop in recording studios. Most of the money is to be made touring in the US.

"But I was very impressed. I must admit I was more impressed with what I've seen here, than what I've seen in Europe."

• *Madeleine Murray*

LIVE's live sound

continued from opposite page

PCM 70's (reverbs), an AMS RMX16 (reverb), and a TC Electronic 2290 multi-effector for auto panning and delay. Sitting between all these was a Roland SDE 3000, an old friend which was pressed into use for those simple (yet hard to get quickly) l-o-n-g delays, like over one second. Lemon discovered later the TC2290 had an optional 2.8 seconds capability. But he loves that Roland. It's an issue when mixing. You need a simple way to get a long delay, and most modern multi-effectors dick around at the user interface. Get an older digital delay and go for it.

The bottom of one effects racks was loaded with dbx 160A compressor limiters, the other had a batch of Drawmer dual noise gates.

Lemon used SM 58 vocal microphones, Sennhieser 414's on guitars, and a Shure SM 57 on the snare top (with a 414 underneath). The objective (make it sound big without killing you) was truly met. Next stop the European circuit, where you can mix on a different desk every night - which truly sorts out the good engineers from the upstarts!

• *Julius Grafton*

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LIGHTING

MONTHLY

June 1997

Edited by Carriona Forcer

LXbizzBITS

PRODUCTS

BANDLIGHT

BandLight lighting effects system is ideal for live music, discos, small theatres and schools. A BandLight system consists of one



BandLight Console and up to four remote 4-channel power modules (Stage Boxes). An important

feature of the BandLight is that the connection between the desk and the stage boxes uses standard microphone leads; the run from desk to stage can use a spare channel in an existing multi-core. The proprietary Low Noise Digital Multiplex (LNDMX) technology ensures there is no interference between sound and lighting channels in the multi-core, they claim. Features include: 8 channel fader; sound triggered chaser; flash keys; simple, fast set up; and rugged construction. The console costs \$499, the power modules are \$599 but at the moment you can buy a starter kit comprising of one of each for \$900 inc. tax.

READER SERVICE NO 400

ATOM GETS BIGGER

The recent success of the Atom range of consoles, from Australian manufacturer, LSC Electronics has been further advanced with the release of the upgraded 1997 model.

The Atom now boasts an inbuilt bass trigger for stepping chases, crossfading of chases on the submasters and video input that displays current status, stored memories and an extensive 'on screen' help menu.

READER SERVICE NO 401



SEGA WORLD



Sydney's latest attraction comes to life

Instead of bringing over some of the world's best technicians to create Australia's first indoor theme park, the company decided to use home-grown talent. Almost everything in the indoor theme park, from the architecture to the theatre and set design, industrial and interior design, landscaping, lighting, flooring, show control equipment, model design and graphics, is the work of Australian companies.

The multi-company collaboration was headed by Mark Buczynski, of Attractions International, the Sydney based company which designed the show concept for Sega World. Mark employed one of Australia's lighting and special effects designers, Roger Foley to design the lighting for Sega World.

Roger Foley (also known as FOGG) not only designed the lighting and its control

system but also many of the luminaires and special effects themselves. Sega World is installed in a building of some 10,000 square meters with no windows and a black ceiling - a very large black room.

"This gives me enormous scope for the creativity of the lightshow with none of the usual constraints caused by appearance and placement of the lights and fixtures themselves," said Roger.

Theme parks are usually illuminated by means of normal architectural luminaires, fixtures and fittings. Low voltage, short arc or fluorescent lamps are usually used and they are switched on or off as required.

The simple idea for Sega World was to treat the whole building as if it was a theatre stage and to distribute power using traditional theatre lighting patch panels linked through dimmer racks and controlled by a single computer that can coordinate sound, special effects, video, laser and other effects as well as all the luminaires.

The system allows many different lightshow programmes to be entered and selected at will, over time or by an operator.

The internal lighting was designed and installed in such a way in the 10,000

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LXbizzBITS

PRODUCTS

POPS, BUZZES,
CRACKLES

Andy Ciddor investigates this strange phenomena

It's the same old story: half an hour into rehearsal and the appalling buzz fills the house from every speaker, changing pitch and intensity with every lighting cue. *Of course* it's a lighting problem. Everybody knows that anything that goes wrong with the PA is a lighting problem. Perhaps this is the issue at the heart of the "occasional disagreements" that crop up between lighting and audio people.

Naturally enough, when the faulty microphone cable, guitar lead or splitter is located and replaced the "lighting problem" is fixed and the buzzing stops. Let's face it, lighting equipment does produce a range of interference in quite horrendous quantities, and will continue to do so until we can replace the dimming and switching technologies in current use with something more electronically benign. Until then, what can we do to limit its impact? Before we can answer that we need to look at what actually causes the noises.

There are three major sources of interference produced by lighting systems:

- Mains borne noises caused by switching large amounts of current, for example when the heater on a fog or smoke machine cuts in or when the striker circuit on a discharge luminaire is used.
- Mains distortions produced by devices which don't use the whole of each mains cycle, such as SCR and Triac dimmers or the switch-mode power supplies used in many electronic devices including lighting control desks and video monitors.
- Radio Frequency Interference (RFI) generated by the rapid changes in current, produced by any of the previously mentioned events.

When you think about it, it's a bit of a wonder that there's any of the desired signal coming out of a sound system at all. Well, now we've confessed to actually producing the offending interference, how is it that I claim it isn't a lighting problem if it gets into the sound system? The truth is that all of the electronic systems in a production should be engineered

from the ground up to minimise, and where possible avoid, the signals from one system affecting any of the others.

How do these problems show up in a sound system and how can we identify the type and source of interference? Mains related problems tend to appear in entire sections of the audio electronics such as an entire effects rack and desk, or an amp stack (although it may only be in one third of the amps if three phase power is used). The interference shows up as either splats or farting noises when a device is switching (followspots and robotics starting or a fogger heating) or as a continuous hum or buzz, which, if it originates with dimmers, will change pitch and intensity with each lighting cue and may even disappear in a blackout or when channels are at full (this is usually the point when some helpful sound person suggests leaving the lights up at full for the entire show to avoid the audio problem).

Radio Frequency interference usually shows up as a buzz or hum in audio inputs, mostly microphones or DI's (direct electronic input from an instrument) either in a single channel or in a group of channels running down a single snake (multicore). RFI almost always changes pitch and intensity with lighting changes.

Eliminating the mains borne problems produced by today's lighting systems, whilst technically possible is not really an option for most systems as it involves large inductors and associated electronics which are not only prohibitively expensive, but also far too heavy and cumbersome to be part of anything but a fixed system. The most practical way to deal with mains problems is to keep the lighting power source as far from the other electronics in a production as possible. Run the sound, talkback, video etc from a separate electrical sub-board or even better from a separate supply feed or sub-station. This will reduce the interference substantially, often even eliminating it completely. If separating the power feeds

ONE TOUCH CLAMP

Every so often a manufacturer produces a product not as part of a continuing development of its established range, but from an understanding of how other products interact with its own. For well known roof and truss manufacturer Total Fabrications the first real alternative to the standard TV clamp, the One Touch Clamp, is just such a product. Fast and easy to use this new lighting clamp is rated to 500kgs. As the name suggests the One Touch Clamp does away with the need for laborious screw type devices, using instead a simple but powerful lever lock to bind securely to truss cord, flybar or pipe. With its heavy load capacity the One Touch Clamp is ideally suited for rigging the largest HMI's as well as the increasing variety of large bodied automated lamps. Designed by Total Fabrications in response to the growing demand for rapid deployment tools, the One Touch Clamp not only improves rigging time but also reduces damage to aluminium truss cords (as produced by screw clamps) thanks to the jaw like structure of the clamp mechanism.

Total Fabrications Ltd +44 (0) 121-722-5234

TWO NEW COEMAR ELECTRONIC CONTROLLERS

The Coemar Manual System 60/+10V and DMX512 and Coemar DMX controller 8 are the first electronic controllers directly designed, developed and distributed by Coemar. The Coemar DMX controller 8 can control up to a total of 8 Coemar nat tm 1200 dx bbi, Coemar nat mm 1200 dx, Coemar Microscan 3, Coemar Samurai 700, Coemar Samurai light 1200 or TAS Crono and TAS Mini Ultra-Scan 2 fixtures.

The Coemar Manual system 6 generates 6 x (0/+10V) and DMX512 channels. It can be used to control all fixtures which are compatible with these signals, such as: Coemar Comet, Microscan 2, TAS Mini Ultrascan 1 and 2, but it has been designed principally to control the 6 channels power packs.

READER SERVICE NO 402





LXbizzBITS

PRODUCTS

LARGER AXIOM HITS MARKET

After many months of development and prototype showing at exhibitions, the first production units of the new Axiom 48 and Axiom 6C consoles from LSC Electronics have been shipped to customers. Production has been stepped up and the many back orders should now be shipped.

READER SERVICE NO 403

THE AURORA GROUNDROW

New from Selecon is a purpose designed asymmetric Groundrow designed to light Cyc's up to 9.0 metres high from a distance of 2-3 metres. Features include: a very smooth beam with even fall off; repeatability of beam characteristics with our extruded reflector; maximised filter life with our unique dual chamber construction; a flat filter frame easing filter cutting and mounting; adjustable feet; relamp without disturbing the filter; robust construction with a combination of extrusions and formed steel panels; hinged single or 4 chamber linear; choice of input connectors, multipin or tails; safety features such as dual microswitch cutout and safety glass; complies with CE standards.

READER SERVICE NO 404



P.A.L. LABELS

P.A.L. (Plastic Adhesive Laminate) Labels have been designed for fixing on either ribbed or smooth aluminium flight cases. The special coated foam adhesive absorbs surface irregularities and transit vibration to ensure a strong bond. Because P.A.L. labels are undersurface printed, it enables you to write your instructions with a waterproof permanent marker pen, this will stay in place until required. To remove the writing, simply wipe with a proprietary cleaner and your P.A.L. label will be clean and ready for use again.

READER SERVICE NO 405

doesn't completely solve the problem, it's time to bring in the serious tools: mains filters which generally take care of clicks and splats, line conditioners which are useful for most of these problems (I put line conditioning in for all production electronics wherever possible) and as a desperate measure: line isolating transformers and maybe even the line balancing devices described in the April issue.

The only way to stop RF interference from leaking out of a dimmer system is to put it all in an earthed metal box (a Faraday cage), which isn't entirely practical given the amount of flexible cable used around your average lighting rig. We can minimise the amount of RFI released by keeping as much of the cabling as possible in metal ducting and by properly earthing the cases of all of our dimmer racks, but this is only part of a fixed venue and none at all of a temporary rig. The other options we have available are based on the physics of radio wave propagation. The inverse square law tells us that keeping the transmitter (lighting mains cable) and the receiver (audio cable) well apart will reduce the interference to a workable

level. Similarly radio propagation theory tells us that if the transmitting and receiving cables are kept at right angles, virtually none of the RFI will be picked up by the receiving (audio) cable. Finally the principle of the Faraday cage (earthed metal box) can be turned around and used to stop interference getting in to an audio cable which is after all the point of the whole exercise. This is the function of the braid or foil screen on a microphone cable: the pair of internal wires in a mic cable carry the signal while the screen acts to prevent RFI from getting in to the signal.

The previous sentence is the key to the most common audio vs lighting problem known to techniciankind. Audio folk are prepared to believe that a cable is fully functional if, when you plug a mic into it and count to two, everybody else's ears ring for several minutes afterwards (the sound people don't suffer from this as they are all deaf from having PAs blaring "two...chew" in their ears since birth). They usually don't check the integrity of the braid at this point and, of course, the lighting system is turned off, as lighting crews flee in terror at the words "sound check". Thus any cable with a shonky Faraday cage will remain undiscovered until later, often the first time that particular cable is in use with the lights up. When the buzz starts there is usually someone on the crew who notes that the buzz is associated with the levels of a particular luminaire (ASMs appear to be very talented in this area) and immediately starts harassing the lighting crew to fix the luminaire, or worse yet, commences to disassemble said luminaire to find the "fault". Before disciplining this helpful crew member with your shifting spanner, pause a moment, what you have actually been told is where the faulty audio cable is running - thereby saving you the work of finding it for the sound crew (who at this stage are usually on the talkback complaining about the "lighting problem").

The broken braid on microphone and instrument cables is such a constant source of finger-pointing and all-round grief that an audio cable checker for XLR3 and 6.5mm jack plugs should be part of every lighting toolbox. If you don't have such a device, use your multimeter or continuity checker: to test the cable, but only take the trouble to check continuity on pin one, that's the braid. The other two pins only carry the audio signal.

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The Hazemaker produces a texture in the air where vision is clear under normal lighting and focused beams of light are accentuated. The fluid is water soluble and does not leave oily residue on equipment, filters, and technicians lungs. Self-contained in a sturdy road case the Hazemaker requires no warm up time and is very economical to operate. For further details see your Rosco dealer.

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SEGA WORLD

continued from page 55

square metres of space in the building, that the audience are transported far from the ordinary, normal world to another time and place. A place where anything can happen, where their sense of wonder is stimulated to a heightened degree of anticipation, where there is a positive uplifting feeling of confidence and a 'lightness of spirit' created by the 'light'.

To achieve this each of the three themed zones, the spaces, the design elements and pathways are illuminated as though they are on a theatre stage using light, tint and shadow to give a sense of mood, time and place. The audience become players on the stage.

This 'theatre' environment provides many opportunities to direct the viewer's attention to specific elements of the 'solid' design in a way that is not possible where 'flat' shadowless lighting is used. And to use light to create 'strange spaces' by juxtaposing and contrasting lighting movement, rhythm and distortion effects.

The fit-out is achieved in such a way that it is a simple process to redesign, reposition and reallocate luminaires and circuits to accommodate any changes that may be required. Roger stressed that the entire system was designed so that the operators at the park could enter their own ideas and reprogramming would be easy.



A Dataton system controls the timing whilst a Pulsar Masterpiece controls what happens in that time.

"We didn't want just an on/off switch with no options," said Roger. "With the Dataton you can change a cue for any one of 700 circuits by 1/100th of a second at a time and you can train someone to do this in twenty minutes."

Roger did a lot of research before he decided on the Dataton. Even though it was beyond his scope, he didn't want to

design a light show he didn't know how to control. Roger looked at a rival system, stating he was computer illiterate and asking how it worked. After two hours he still couldn't work it and they asked him why he needed to as they had "trained technicians" who could work it for him. But Roger didn't see why you had to pay \$150 an hour every time you wanted to change something so he crossed them off his list. He went to see Ross Parker at Dataton with the same story and within twenty minutes he could easily operate the system.

Roger Foley designs for effect rather than from catalogues. He redesigns and modifies standard luminaires and effects which ensures that the subjective impressions on guests are totally unique and different to any other themed environments they may have experienced. The budget for the lighting was not huge - around the \$1 million mark.

"Even though our budget was cut twice, we did not cut the budget for the designers, the research and development of ideas, nor for the crews setting it all up," stated Roger. "The most important thing in getting a good result is not the technology or equipment but the people who do it. The right person can do an amazing show with an old jam tin, piece of alfoil and a few bits of cellophane."

Roger did not want to pay for standard lights, designed for several uses when he only needed them for one function. He approached Sean Cairns at Prolite to redesign one of his lights especially for the project.

"Standard theatrical luminaires are designed to carry out many different tasks

The Pulsar Masterpiece

Controlling all conventional lighting, intelligent lighting, strobes, signage, scenery and smoke machines at Sega World, Sydney's new \$80 million indoor family theme park at Darling Harbour, are Pulsar's Masterpiece 108 Controller and Masterpiece Replay Units.

Sega World is split into three eras - The Past, The Present, and The Future. All rides in each designated area are programmed on the Masterpiece 108 Controller, then downloaded via memory card into the Replay Units.

The flexibility of the 108 Controller allows multiple scenes and chases to run simultaneously with different fade and chase rates. Program changes are made by

plugging in the Controller and downloading the changes into Replay Units. It's as simple as that!



As a precaution, operators can have ideal control via the front panel key pads or show control via midi from the Datatron Show Controller. Not only is this system a cost effective way of controlling large areas, it is tamper proof once fully installed.

The Pulsar Masterpiece range enables the best results from intelligent lighting to be obtained and replaces the collection of controllers that previously would have been needed to complete a lighting control task in a modern environment.



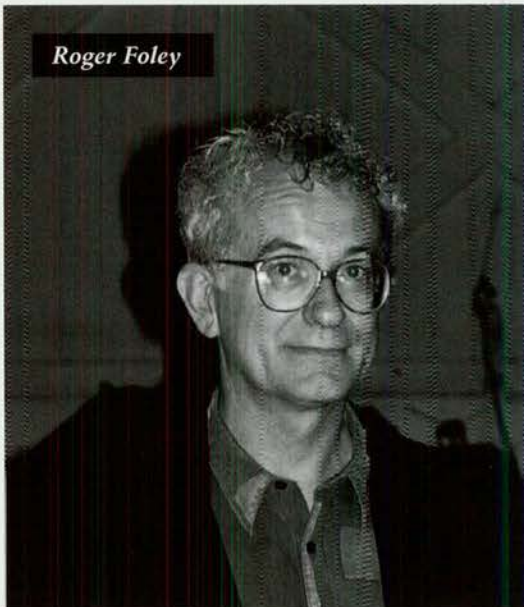
so that the theatre can change the way the light is used from production to production," explained Roger. "That's the reason why these lights are expensive. In a permanent themed environment it seemed to me unnecessary to have lights that can carry out many functions. The designer needs to be clever enough to determine what the function is in the first place and then only have lights for that single purpose. This means the luminaire can be a lot simpler.

"With the help of Sean Cairns, a Prolite was redesigned with the resulting fixture being about 40mm longer and Sean has very kindly called it the PRO-FOGG! It projects patterns like dappled sunlight streaming down through the leaves of trees. These luminaires worked out to be about two thirds of the price of getting a normal theatre luminaire, gobo holder and gobo."

Roger certainly does a lot of research on his projects. When he decided that blacklights were to be used he contacted Mike Tanner at Chameleon to organise a bit of a 'blacklight shootout'.

"We got all the latest Wildfire blacklight technology, all the Altman blacklight tech-

Roger Foley



nology, all the traditional fluorescent tube blacklighting and the traditional talasted bulb blacklight technology," said Roger. "We got all these different blacklight sources and had a 'shootout'. Much to our surprise we found that the common blacklight fluorescent tube (proportionally to it's cost) puts out a phenomenal amount

of blacklight compared to some of the more expensive fittings."

A fitting was designed that would maximise the use of the blacklight coming from the tube - because it comes out at 3600 and it was only wanted to come out at 1200. A mirrored reflector designed in a double zig-zag pattern enabled all the blacklight from the tube to come out from the front.

These fittings were successful as they were placed fairly close to the object they were lighting, they wouldn't work so well at a distance.

"In the old days we used to do that with follow spots," Roger reminisced. "A woods glass filter in front of a follow spot is an amazing blacklight source for a long throw, you can't get a longer throw than you get with a follow spot."

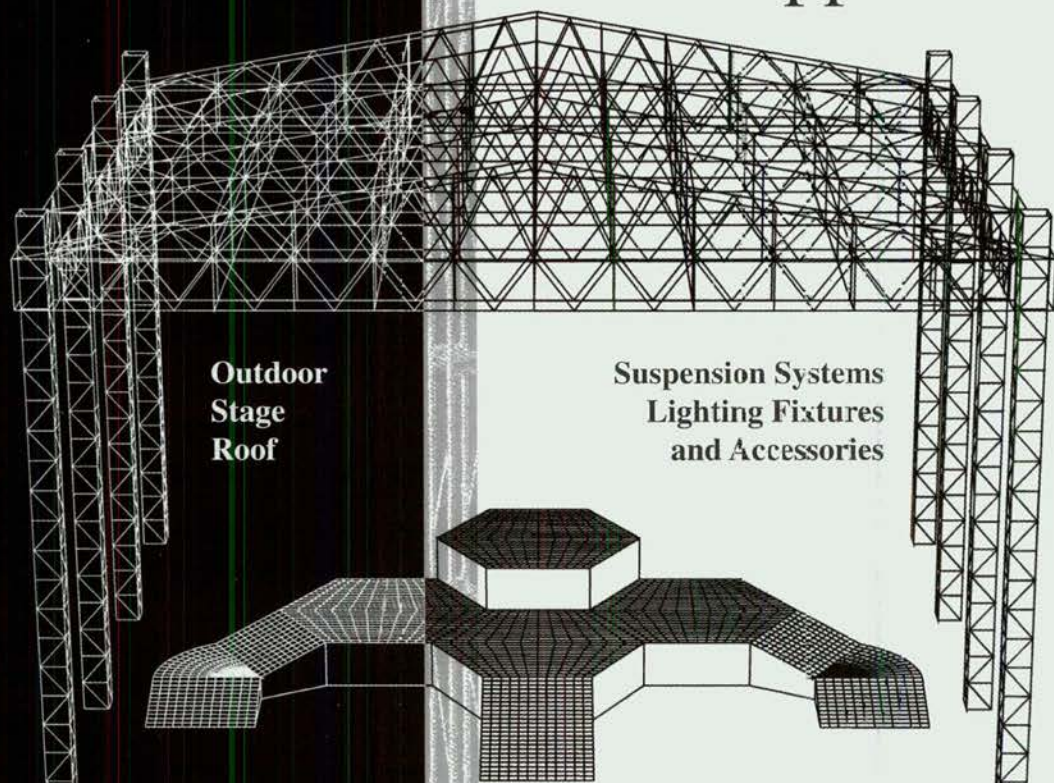
Old fashioned colour wheels were used as Roger likes the look of them, turning around, when they are well designed.

"I had one of our art people design the way the colours would be put together and it looks like a multiple Yin-Yang symbol," said Roger. "The wheel itself becomes part of the theming. We had colour wheels

continued on page 74

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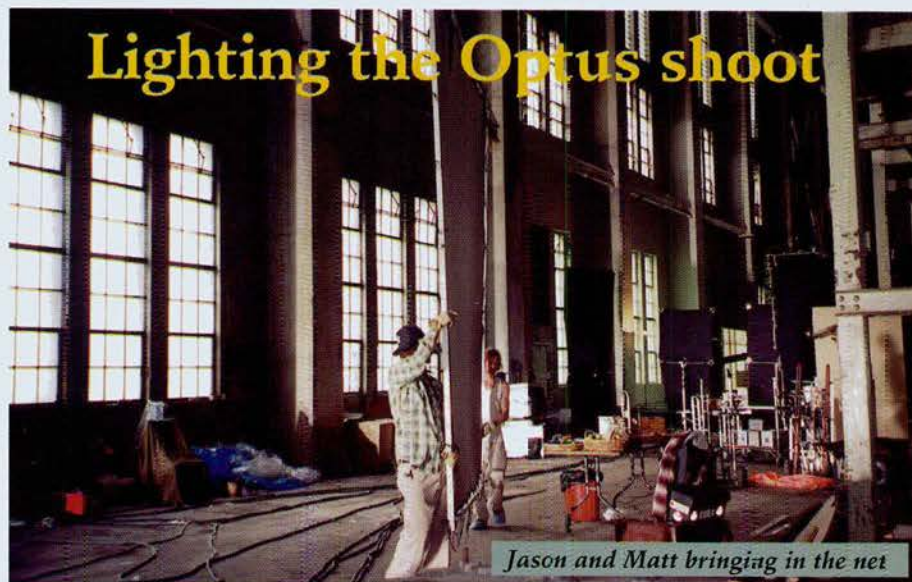
Write in Reader Service Number: 154



GETTING POWER TO THE POWER STATION

LXbizzBITS

NEWS



Jason and Matt bringing in the net

Phwheww! These guys are really working hard.

The location is enormous, a vast abandoned power station in Balmain. The gaffer's trucks are far away from the set. Safety officers have strung striped tape and stuck orange witches' hats all around the crumbling concrete monolith.

Richard Gibson, New Zealand commercial whiz kid is directing this glossy, hi tech ad for Optus, Business Solutions.

The first set today is a sleek futuristic office, where a man, caught in deep shadows, and the camera speed tweaking Gibson goes in for, holds a phone. The office has been built within the station, so the gaffer, Rick McMullen, is dealing with the vagaries of natural light. The backdrop is a wall of fake windows.

"There's no glass in those windows, so we found a diffusion gel which looks like glass," McMullen explains. "We put some green on the windows, to give it an impressive modern office look, without be-

ing too Fascist. Blue is too cold, and stark. Green is grander."

McMullen has worked with Garry Wapshott on many big budget commercials. A gaffer has to have a good understanding of what the DOP is looking for. "Wapshott's great," McMullen says. "He has a very organised eye. He doesn't rush in and start lighting things. He sees what happens to things in natural light, and then just enhances that. We're using very few lights in here."

For this wide shot of the office, there are two LTM18K HMIs, bouncing light off a shallow pool, and the ground. Both are about 50m away, as is the gaffer's truck. There's just a small amount of light on the set, provided by the huge natural windows, behind the set. A huge 12x12 single black net reduces the light flowing in.

"It was a rush this morning, because the sun starts to come round, and we get too much light through those windows," McMullen says. "The only problem with shooting environmentally is that you have to keep an eye on the sun. But we're lucky today, with overcast conditions."

The crew moves in for a close up, a tricky shot in which the actor's image is reflected in a glass ball. This is the world of big budget, 5 day commercial shoots. A lot of attention is paid to perfection.



MOVES

Ex Premier Sales Manager, Brett Hodges has joined the team at Frontier Lighting. Frontier hope to utilise his experience in the film and TV industry as well as the corporate sector. Pip Robinson (formerly Graftons Lighting & Sound's General Manager) has taken a position with Chameleon Touring Systems as Senior Production & Account Manager.

BIG MAC

Frontier Lighting have been busy installing architectural light fittings throughout the Queensland McDonalds' stores.

NEW FACE AT SHOW TECHNOLOGY

Tina Medaglia is the newest member of the team at Show Technology and she carries the title of Marketing Executive and Personal Assistant to Emmanuel Ziino.

SUPERVISION

Supervision Electronics have fitted out several clubs with Abstract, Infinity and Le Maitre products. These include The Blue Moose in Bundaberg which has Abstract Futurescan 3 CE's, Abstract Colour Changer CED's, Abstract Scenesetters and a Le Maitre Red Devil smoke machine. The Blue Moose in Mackay have Abstract Futurescan 3 CE's, Abstract Scatterspots, Hypermoons and Scenesetters and a Le Maitre Mini Fog smoke machine. Supervision have also been busy installing Abstract and Infinity products into the Phantom Nightclub in Boroko, Papua New Guinea which include Abstract Futurescan 3CED's, Twister 3's, Infinity Mirror Balls and Pin Spots, Orion 75w Strobes and a Le Maitre Mini Fog smoke machine. This club was also the first in the area to have Sub speakers installed and the locals referred to this new improved sound as white man's magic!

ENTECH SUCCESS FOR SELECON

Selecon are still buried in follow ups from Entech. Debuting at the show was the Aurora range of 1250w cyc's, floods and groundrows. Designed after input from major Australian production companies and theatres, the many operational features as well as their performance found favour. Pro Design Lighting of Perth ordered some for their rental department with many others booking samples to try them out. Also snapped up at the show were the 1200 Condensor Wide profiles which lit the stand. Queensland based Fitalite and Frontier Lighting have both added them to rental stock for use in trade display lighting.



LXbizzBITS

PRODUCTS

MINI SCAN HPE

Seen at Entech was Clay Paky's Mini Scan HPE which uses an HTI 300 lamp specifically designed by Osram. The optical group has been improved and is now nearly twice as bright as its predecessor.

Mini Scan HPE can project up to 36 colours and incorporates several special effects such as bi-colour beams, rainbow effect, ultra-violet as well as 6 gobos which can rotate in both directions with indexed positions. All gobos are interchangeable and can be replaced by any of the metal or dichroic gobos available from Clay Paky.

READER SERVICE NO 406

BUG-LITE™

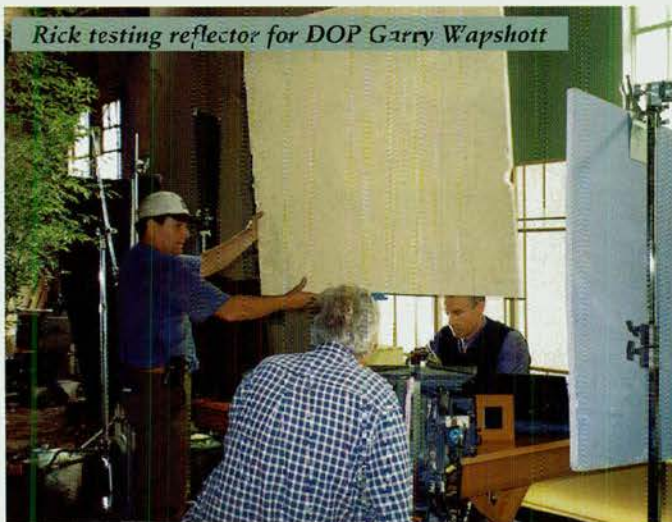
Bug-Lite™ is the latest product innovation of K 5600, Inc. Still in the prototype stages, it features a bayonet style accessories holder, 200w MSF/SE Daylight Lamp and U.V. safety glass, frosted or clear. The Bug-Lite™ gives great flexibility to the image makers to create their own fixture from a quasi bare bulb HMI.

The Bug-Lite™ is quiet, flicker free and dimmable with the Joker compatible electronic power supply operating on 110 and 220 volt or 30 volt through the 200w Slimverter.

READER SERVICE NO 407



Rick testing reflector for DOP Garry Wapshott



McMullen starts adjusting reflectors and cutters off to the side. He gets on the 2way, and asks his best boy, Jason Rogers, for two C stands and black net. "Coming from a close up to a wide shot, we wanted to make the light a bit softer for his face. We used a hard light before, which worked well on a very wide 12mm shot. We kept the two 18Ks, but put a lot of cutters in the path, to tease the light off him. We shot into a clear glass ball, so anything from the front would be seen in the reflection."

It's an image chain. The DOP looks through the lens, while McMullen adjusts the light with reflectors and cutters. When the DOP likes it, McMullen remembers the position, and gets the stands and clamps to fix it. "We've painted a piece of polystyrene with some lime wash, a warm colour on one side, and a cold colour on the other. When we have cold light coming in, like this, we reflect back warm light. We used lime wash because it's not highly reflective."

This shot is very fiddly because it's an extreme close up, and reflections are involved. McMullen and Wapshott work with possible reflector positions for fifteen minutes, until they're satisfied.

The next shot involves more light fiddling. The screen behind the actor is to have space images projected onto it. The light levels have to be low enough so that the images read, but still show the translucency of the screen.

"We're about to do another tricky shot, there's no shot in this ad which isn't tricky," McMullen says.

The two assistants bring in a huge black screen to black out the 4x4m rear windows, so that the projection shows. Then they run to the truck and bring in two 5Ks, to simulate the natural backlight. They are ready with stands, gels and clamps, kept on trolleys near the edges of the set. The lights are rigged, power is brought over, the gels are cut and clamped onto stands. A smooth operation.

McMullen's skill is to communicate well with the DOP, understand what's needed,

continued on page 56



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STUDIO COLOR

By Julius Grafton

High End Systems have a hit on their hands with the Studio Color automated wash fixture, released at ENTECH last year (1996) after a slight delay in the form of legal action by Vari*Lite. Because it was the Vari*Lite VL 5 which was the fixture that Studio Color competed with at time of release.

Since then the Martin MAC 600 has popped up, but this review is about the Studio Color. To investigate I headed to Chameleon Professional Lighting Sales, where Mike Tanner was by chance evaluating a Studio Color with a Celco Ventura console. More on the Ventura sometime soon.

Looking at Studio Color it's pretty obvious that this is a fully articulated moving wash fixture, capable of 370° pan and 240° tilt operation.

Studio Color has entered the Chameleon rental inventory, where it is being shown to various lighting designers with a view to theatrical use. This is plausible due to low noise in operation, with the stepper motors emitting very little in the way of decibels. It has no cooling fan and so is to all intents inaudible.

LAMP

Studio Color comes supplied with the Philips MSR 575/2 lamp, with a 750 hour average rated life. The /2 means this lamp is daylight balanced, for 6200°K as opposed to 5600°K. The lamp cost is less than \$550 tax paid.

"For TV use you would have to relamp all your moving lights or indeed any MSR or HMI lamped device, to get constant colour balance", Mike Tanner told me. This is due to colour temperature deterioration as the lamp ages, although typical deterioration is only 300 - 400°K. Equally you wouldn't mix colour temperatures either, so use 6200°K or 5600°K exclusively.

The Studio Color, like almost every other discharge lamped device I've seen, has a lamp hour counter. This eases the perpetual headache of lamp management, which is tested in every rental inventory when a lamp is replaced on site without the lamp counter being reset. Naturally a discharge lamp used beyond rated life is perfectly capable of exploding and even trashing your expensive light!



Lamp access on Studio Color is at the rear of the head, via two hand turn-able screw wheels.

COLOUR

The colour mixing system uses a subtractive mixing system of three glass disks, each with a helical (spiral) line of colour. So there is a Cyan, Magenta, and a Yellow helical disk. To increase saturation, the fixture winds in more of a given colour or combination, ie: the spiral line gets fatter. Mixing C, M and Y together is the same process printers use to produce coloured images in this magazine - with the addition of Black, known as 'K'. So we mix C,M,Y,K.

If your lighting control desk is smart, you can programme your colour very close to gel match, according to Mike. A Lee 106 can be replicated very closely for example.

There is also a six colour wheel for unique or dichroic or 'special' colours. Colour correction is fitted as standard.

SERVICEABILITY

"Service IS an issue with any moving light" Mike says. "How you make that service easier is an issue, housekeeping means keeping it clean in a rental application. Two easy release clamps can be operated without tools, the lower clamp has a safety wire to keep the nose from falling away. Take off the nose cone and you have access to the Iris, stepper motors, and the various wheels between the iris and the back of the unit.

Covers on each side of the inner housing allow access to the wheels and diffusers behind the iris, and a blast of dry air through there on a regular basis is a good idea.

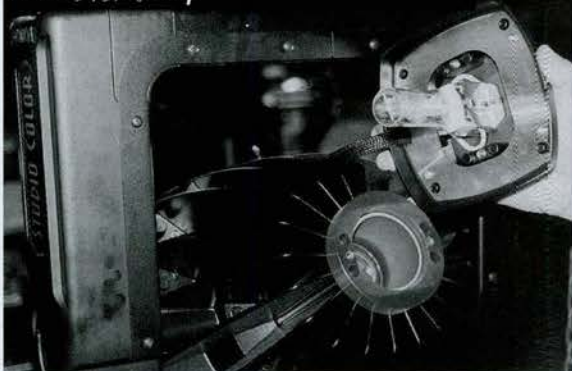
"In the markets we service, which are the industrial theatre and the traditional theatre markets, people end up building things on site, so you get dust inside fixtures", says Mike.

Hanging is via 2 ordinary hook clamps, there are 3 x 1/2" mounting holes on each side of the base.

FEATURES

"A particularly useful feature of the unit is beam morphing, where you can change the shape of the beam to mimic the ovoid beam shapes you get from a Par lamp, and actually rotate and create effects".

MSR 575/2 lamp



Mike Tanner in the Chameleon workshop





~ REVIEW ~

It has an iris dimmer, and a shutter for black-out and for fast strobe effects, the unit can fade right out. Variable frost is also fitted. A drawback is the side spill which is typical from a Fresnel. In a theatrical performance where this is hard up against a set piece, you do get side spill. In the case of an ordinary Fresnel you'd put on a barn door or the lens would be set back within a casting. We are looking at using these in a theatre presentation shortly with a custom manufactured ABS snoot to keep the weight down.

The beam is variable between 8° to 22°, it is not quite as variable as a typical Fresnel. As an indication, 20° is a normal beam spread for a profile spot, in fact the veritable old strand Pattern 23 has a 30° beam spread.

OPTICS

Against the VL 5 you get a higher light output, and beam shaping. The VL 5 uses a 1000 watt tungsten lamp with less output. There is a new VL 5 with a discharge lamp source coming, apparently.

Using a rig with of 1200 watt moving mirror fixtures you need something with some punch to keep up. A Fresnel lensed type fixture puts out more light than a profile type fixture because there is less glass between the light source and the target area.

You can use the Studio Color as a backlight where you need a 2:1 ratio to get over a 1200w moving light.

NOISE

"We are satisfied the noise level would be acceptable for a straight Shakespearian type production", says Mike. The stepper motors operated at something over a whisper.

CONTROL

When first powered up the Studio Color will pan, tilt, rotate and the internal wheels will all move through a brief test routine. This will happen if you interrupt power too, if you do your homework it's rare to have a power outage. Of



course most fixtures will need to do this, and discharge lamps need to cool before they can be restruck.

One little snafu: this unit (the M model) doesn't know if it's been knocked out of alignment, like if a bit of scenery hits it. I'm the same way myself. But when you repower the unit, it will then reference itself and find ground central - so to speak.

The new S version does have full positional feedback, and was first shown at ENTECH 1997.

The DMX 512 connection is - surprise - a 3 pin XLR. This is asking for trouble, but other manufacturers like Martin fit 3 pin as well instead of the 5 pin XLR which is supposed to be the standard. Just hook up a talkback line with 70v control voltage flowing along it and fry the UART in the unit.

For console choice use anything DMX. Chameleon have used a Celco Ventura, Jands Hog or Event, and any of their ETC consoles - "we're quite happy with the way they behave".

The Studio Color uses 14 dmx channels for standard 8 bit (resolution) operation. If greater resolution for pan and tilt is required then you can double up these channels and operate in 16 bit mode. The other functions remain in 8 bit.

Mike Tanner explains the benefits of 16 bit pan and tilt resolution: "In practical use the pans are more accurate and predictable, as are the stop points. You see it more in a moving mirror unit projecting a graphic image to fine resolution and you need that consistent repeatability. It's less of an issue with a wash luminaire where you're looking at being able to paint the stage".

MAINS

This version of Studio Color (the M version) has fixed mains voltage selection, however the new S version auto senses input mains voltage between 110 and 240 volts. At 240 volts it is recommended that 5 amps mains consumption be budgetted, at operation mains draw is around 4 amps. Lamp strike draws a bit more.

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Chameleon Touring Systems (02) 9310 5222
3.5" Ellipsoid rated at 500w these compact (370 mm long) spots are available in 18°, 23°, 28°, 38° and 48° beam angles. Each unit is supplied with clamp, safety wire and colour frame. 240v long life (2000 hrs) lamps available. \$459.

360Q is the workhorse of the Altman range and are rated at 1000w (at 240v). Available in 11°, 19°, 26°, 37° and 55° beam angles. Each unit supplied with hook, safety wire and colour frame. \$472.

Shakespeare a popular dichroic reflectored ellipsoidal spotlight as used on Miss Saigon, Phantom, RSC's Midsummer Nights Dream, Sydney Dance Co and Sydney Theatre Co. Available in 50°, 40°, 30°, 20°, 10°, 12° and 5°. Supplied c/w clamp, safety wire and colour frame. From \$660.

ETC SOURCE FOUR

Jands Electronics (02) 9582 0909

Source Four available in 5°, 10°, 19°, 26°, 36°, 50° formats. Interchangeable lens tubes on compact high output 575w fixture utilising HPL 575w lamp and a faceted, moulded, glass reflector for optimum performance. \$990.

Source Four Junior available in 26°, 36°, 50° formats. Compact version of the Source Four fixture. High output utilising HPL 575w lamp and faceted glass dichroic reflector. Accessories as for standard Source Four. \$695.

STRAND LIGHTING

Bytecrafft (03) 9587 2555 / (02) 9550 3955

Leko high output 1000w ellipsoidal spotlight with a range of five fixed angles, 15°, 20°, 30°, 40° and 50°. Designed for ease of focusing, compact dimensions and light weight. High angularity shutter assembly and simple lamp replacement. 5° and 10° versions also available. \$603.

TEATRO

Lightmoves Technologies (02) 9560 0000

Comma 26 650w, half peak 12.8°-28°, economical profile has insulate controls for easy focus. Comes with lamp, shutters and gel frame. \$536.

COEMAR

Coemar De Sisti Australia (03) 9467 8666

Centro beam spread: 25deg. Size(mm): (LWH) 390 x 195 x 260. Wattage: 300/500W GY9.5 Working Distance: 3m -12m. Complete with Framing Shutters. Options include: Iris, Deflecting Mirror, Gobo Holder, Coloured Glass. \$355.

F.A.L.

ELSTA (02) 9568 2100

INSE HMI 575-N HMI 575 lamp, 4 colour filter holders, beam divergence is 14°, fan cooled, iris control, size: 910 x 450 x 320 mm, extruded aluminium finish. \$1475.

PF036 T27 650w, steel shutter blades, extruded aluminium finish, beam spread 16 to 30°, size 530 x 240 x 310 mm. \$450.

PF037 CP70, 1000w, steel shutter blades, beam spread 22 - 40°, high efficiency quartz reflector. \$572.



ALTMAN SHAKESPEARE

ZOOM PROFILE SPOTS

ALTMAN

Chameleon Touring Systems (02) 9310 5222

Micro Ellipse is a compact low voltage zoom framing spot rated to 75w. Using 12v MR16 lamps, this unit is suitable for architectural or display applications. Inc. colour frame and gobo holder. \$460.

Baby Zoom Ellipse available in 3 zoom ranges 15°-30°, 22°-50° and 30°-60° rated up to 750w. Long life 2000 hour 240v lamps available supplied c/w hook, safety wire, colour frame and gobo holder. \$575.

Shakespeare Zoom are available in 2 zoom ranges 15°-36° and 30°-55°. Uses non proprietary lamp, rotating lens tubes, heat proof handles, dichroic reflector, rated at 600w with an output exceeding most 1200w units! From \$900.

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Aust wide dealer network. Sydney - Herkes ph 02 93193133

Acclaim Zoomspot Std (18 - 34) and Wide (24 - 44), 300 - 650w. Industry std 240v "T" class lamps (av. life 500 - 600hrs). Ellipsoidal reflector. Interchangeable lens trays. Wide range of shutter masking angles. Rotatable pattern holder. Auto mains power disconnect, exceeds European safety requirements. L - 480mm W - 210mm H - 300mm. \$455.

Acclaim Condensor Std (18 - 32) and Wide (24 - 44), 300 - 650w. Industry std 240v "T" class lamps (av. life 500 - 900hrs). Dual condensor optics, ideal pattern projector. Interchangeable

lens trays. Wide range of shutter masking angles. Rotatable pattern holder. Auto mains power disconnect, exceeds European safety requirements. L - 480mm, W - 210mm, H - 300mm. \$535.

Selecon 1200 Condensors - Narrow 9 - 21, Medium 12 - 28 & 15 - 31, Wide 28 - 52. 1.0/1.2kw. Industry std "T" class lamps (av. life 500 - 900hrs). Dual condensor optics. Ideal pattern projector, distortion free images over complete beam range. Wide range of shutter masking angles. Rotatable pattern holder. Auto mains disconnect, exceeds European safety requirements. \$975 - 990.

Arena Zoomspot Narrow 9 - 18, Medium 14 - 32, Wide 20 - 37. 2.0/2.5kw. Ellipsoidal reflector. Choice of GY 16 (CP72) or G22 (CP91, CP92) lamp base. Entech Award winner 1996. Interchangeable M & W lens trays. Dual rotatable shutter system. Rotatable pattern holder. Auto mains power disconnect, exceeds European safety requirements. \$1700.

PULSAR

Show Technology (02) 9898 1111

650w Profile Spot designed to full professional standards, this unit enables the lighting director to achieve a fully focussable hard or soft edged beam. Comes with runners for optional gobo holder or iris. \$434.43.

PROLITE

Aust. wide dealer network. 076 327 312

PR5-ZPM/W 500/650w, T25/27 lamps, 16/30 and 26/40 beam angles. Australian made. \$369.
PR10-ZPM/W 1000/1200w, T19/29 lamps, 16/30 and 26/40 beam angles. Australian made. \$573.

PR22-ZPM/W 2000w, CP72 lamp, 16/30 and 26/40 beam angles. Australian made. \$840.

CCT

Rosco Australia (02) 9906 6262

Minuette 650w, 21-36°/17-36°/30-48° compact unit accepts T26 lamp, weighs 4Kg. \$400.

Silhouette Turbo 1K/1.2K T29 lamp, 11-26°/15-32°/28-58° rotatable shutter set, easy lamp change, rugged aluminium extrusion and front reflector for added luminance. \$850.

Silhouette 2K/2.5K, 28-58°/15-32°/11-26° rotatable shutters, two position yoke, external 'peak' and 'flat' adjustment. \$1350

Freedom HX600w axial lamp, includes plug in DMX dimmer, white beam for gobo projection. \$850.

VISION

AC Lighting Ltd (02) 9369 2826

V650ZN/ZW 300/650w; GY9.5 lamp base; 14°-30°/23°-40° beam angle; micro-switch isolation. A compact zoom profile spot for crisp edge spot and gobo projection. Suitable for small theatres and display applications. Price Ex Works London 226 pounds.

continued on page 67



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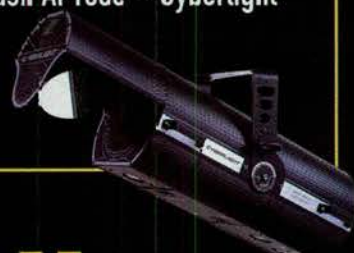
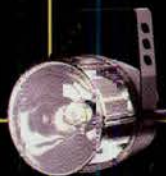


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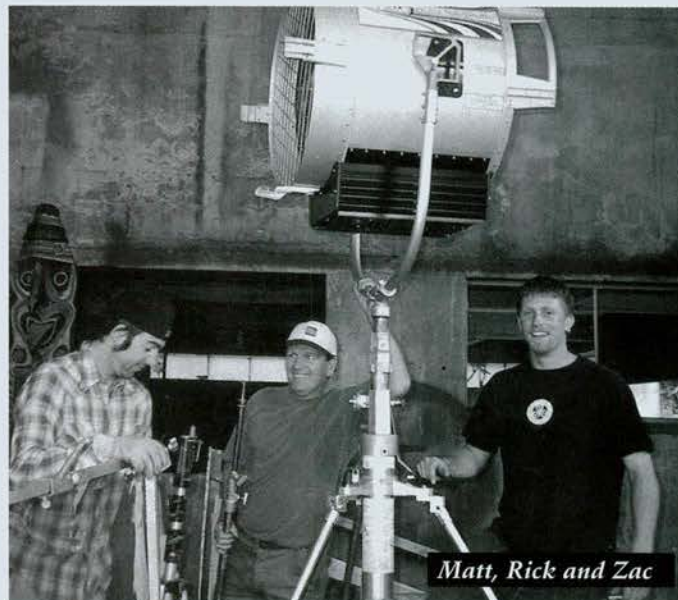
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THE LX MONTHLY NEWS

Optus Film Shoot

continued from page 60



Matt, Rick and Zac

and organise his guys to get it into position as fast as possible. If time was ever money, it's on a film set.

"I'd like to think there's quite a bit of clockwork between the guys," he says. "Jason, the best boy, has been with me a long time. And you need someone who can cover you through your emotional nightmares. We've been working every day this week, starting at 5 o'clock. You get a bit tired after a while. So you need someone you don't have to say too many words to. The last thing you need is for someone to get too emotionally wrought. If he does have a breakdown, he does it by himself in the truck!"

The best boy, Jason Rogers, explains his role. "It's to back Rick up, really. I work with him all the time, we work as a team, I just watch what doesn't get done, back it up, keep an idea what's going on in the truck. I usually know what's in there, and what's not, more than Rick does, even though it's his truck!"

The setup for the projection shot continues. The boys move in an 18K, with more cutters and diffusers. There are lights behind the screen, beyond the screen, and on the set itself around the actor.

The DOP asks for another light, and the guys are on the case right away. Jason runs out to the truck, brings back a light. The stand is ready for him to put it on, someone hands him a gel, which he clamps on. He fixes it up, and moves it into position.

When the shot is over, it's lunch. Then the guys will wrap the setup, and have it standing by for the next shot. "We'll split," Matt Hoile explains.... "There's four of us. Two will go and start setting up the next one, and two will break the set down, and take it to the next set, or to the back of the truck. Closer to the truck all day!"

Working in a derelict power station involves, ironically, supplying your own power. A Viking 150KWA generator is outside, and distributors are spread around the working area. "We're running Camlock to that board," Hoile explains. "Do you want amperage, and stuff? I think everyone will be bored with that."

● **Madeleine Murray**

Production Company Silverscreen

Director Richard Gibson

DOP Garry Wapshott

Gaffer Rick McMullen

Best Boy Jason Rogers

Assistants Matt Hoile, Zac Murphy

Production Designer George Liddle

Write in Reader Service Number: 186

Connections website www.conpub.com.au JUNE '97 66



BUYERS GUIDE

PROFILE/PC SPOTS

continued from page 64

V1200ZN/ZW 1000/1200w; GY9.5 lamp base; 13°-35°/24°-50° beam angle; micro-switch isolation. An all purpose zoom profile spot with rotating frame shutters and external; field adjustment. Suitable for theatrical and studio applications. Price Ex Works London 414 pounds.

V2500ZN/ZW 2000/2500w; G22 lamp base; 9°-25°/17°-36° beam angle; micro-switch isolation. A high powered zoom profile spot for mid/long throws in theatrical and studio applications. Price Ex Works London 710 pounds.

STRAND LIGHTING

Bytecraft (03) 9587 2555 / (02) 9550 3955

Quartet 22/40 650w compact economical twin lens zoom profile with beam angle and focus control in addition to peak/flat beam distribution adjustment. Uses T26 lamp, ideal for theatres, school stages, museums and display lighting. \$448.

Prelude 16/30 650w professional specification spotlight suitable for small to medium venues, high performance optics, uses T26 lamp, 16° to 30° variable beam spread. Includes 4 integral shutters and slot for gobo holder or iris. Also available as 28/40. \$635.

Cantata 1200w professional theatre spot for theatre, concert halls and touring. Includes rotatable gate assembly, easy access for lens cleaning, adjustment between peaky and flat. Uses T19 lamp. Available as 11/26, 18/32 or 26/44 beam spread. \$1070.

Optique 8/17 1200w variable angle condensor optic zoom profile with a smooth flat field ideal for gobo projection, standard rotatable gate assembly, uses CP90 lamp. Also available as 15/42 version. \$1154.

TEATRO

Lightmoves Technologies (02) 9560 0000

Comma 16/28 650w. Removable tray in base of spotlight, two 100mm lenses comprise the zoom optics. Comes with 4 shutters lamp and gel frame. \$550.

Tipo 15/28 budget price is achieved by concentrating on key elements, optical performance, rugged construction, electrical safety. \$1015.

Tratto 22/40 comes with GX9.5 base which accepts either 1000 or 1200w lamp. Suspension

point can be changed via clever extrusion. Fully equipped. \$1245.

Acuto 9/15 double pole switch. Disconnects power as lamp tray is open. Front lens white glass, rear lens borosilicate. Comes with lamp and shutter. \$2123.



VISION ZOOM PROFILE

COEMAR

Coemar De Sisti Australia (03) 9467 8666

Accento available in two beam spreads - 20/35deg. and 16/30deg. Size(mm): (LWH) 500 x 365 x 380. Wattage: 500/650W GY9.5 Working Distance: 3m - 12m. Complete with Framing Shutters & Colour Frame. Options include: Motorised Colour Wheel, Iris, Gobo Holder, UV Glass. \$500.

TAS

Coemar De Sisti Australia (03) 9467 8666

Profile 22/40 beam spread: 22/40deg. Size(mm): 740 x 355 x 408. Wattage: 650/1K/1.2K GX9.5 Working Distance: 4m - 11m. Complete with Framing Shutters & Colour Frame. Options include: Iris, Safety Wire Guard, Gobo Holder. \$933.

Profile 15/28 beam spread: 15/28deg. Size(mm): 740 x 355 x 408. Wattage: 650/1K/1.2K GX9.5 Working Distance: 6m - 17m. Complete with Framing Shutters & Colour Frame. Options include: Iris, Safety Wire Guard, Gobo Holder. \$952.

F.A.L.

ELSTA (02) 9568 2100

PF1245 T27 lamp, 650w theatre lamp, zoom from 20-40°, steel shutter blades, high efficiency quartz, aluminium reflector, optional gobo holder, throw distance 2.5 x 10m. \$531.

PF1250 CP70 lamp, 1000w theatre lamp (or CP24 1000w, CP67 650w, CP23 650w), zoom from 11-27°, steel shutter blades, high efficiency quartz, aluminium reflector, optional gobo and iris, colour frame included, throw distance 5 x 25m. \$983.

Opera 1200 HMI 1200 lamp, variable dimmer 0-100%, holders for five colour filters, zoom from 7.5 - 12.5°, separate ballast. Also available in 2500w version. \$3851.

Scala 1000 CP24 1000w theatre lamp, zoom from 9-18°, holds 5 colour filters. Also available in 2000w. \$1392.

PC SPOTS

SELECON

Aust. wide dealer network. Sydney - Herkes ph 02 93193133

Acclaim P.C. 300 - 650w. Industry std "T" class lamps (av life 500 - 600hrs). Adjustable beam - 4 - 64 degrees. Auto mains disconnect. Rear grab handle. Captive focus movement system. Adjustable yoke position. Barndoor accessory to shape beam available. L - 320mm, W - 200mm, H - 200mm. \$260.

Selecon High Performance PC 1200 1.0/1.2kw. Industry std "T" class lamps (av life 500 - 900hrs). Adjustable beam 4.5 to 62 degrees. Unique 175mm (7") lens. "World leader in beam quality" - Francis Reid. Auto mains disconnect. Captive focus movement. Barndoor accessory to shape beam. L - 400mm, W - 280mm, H - 320mm. Wgt 6.1kg. \$560.

PROLITE

Aust. wide dealer network. 076 327 312

PR5-PC 500/650w, T25/27 lamps, 10/60 degree beam angles. Australian made. \$199.

PR10/12-PC 1000/1200w, T19/29 lamps, 10/60 degree beam angles. Australian made. \$342.

PR22-PC 2000w, CP72 lamp, 10/60 degree beam angles. Australian made. \$475.

continued on page 70

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ETC Source Four

By Cat Forcer

The ETC Source Four fixed beam profile spot comes in six beam spread versions - 5°, 10°, 19°, 26°, 36° and 50°. It has interchangeable lens tubes to get each beam spread, and is a high output 575w fixture that utilises a HPL 575w lamp. It has a faceted, moulded, glass reflector for optimum performance.

But you can read all that in this month's Buyers Guide. What about an actual user? What does he or she think of the Source Four? Rohan Thornton of GTV9 in Melbourne recently purchased eight Source Four fixtures (a mixture of 19° and 26°) from Jands Electronics and gave us the following report.

USE BOUGHT FOR

"We initially bought them for a show called *In Melbourne Tonight*. I was recently in New York where I saw *The Letterman Show* and I noticed that they used the Source Four as their keylight. We don't do a lot of that in Australia so I decided to give it a go. I got a demo in and I really liked it. We now use them on shows like *Hey Hey It's Saturday*."

ADVANTAGE OVER COMPETITORS

"I think their optic field - for a 575w lamp they are quite punchy. They've got a nice, even field and there's a fair amount of adjustment in the actual lamp itself. I like their compact size as they can fit in small gaps to get the right angle."

THE LAMP

"The lamp has a great colour temperature and always burns consistently around 3200°. It's not as fragile as most profile lamps particularly Lekos which if you tap the wrong way, the lamp blows. We've got quite a large amount of lamp hours so far. I think we've only replaced two and that was because they were hit when they were on not because they blew."

"At the moment the replacement cost of the globe is quite expensive but I believe that Osram will soon be bringing out a cheaper version of the HPL lamp. Now the lamps come from Ushio and they cost between \$60 - \$70*. Apparently the Osram version will be less."

OTHER FEATURES

"We've shifted to using the Gam Fusion range of diffusion (available from Miller Professional) as we find that you can soften the light down while still maintaining the integrity of being able to cut and edge it. So basically we're providing a soft key light but we still have the control of a profile spot. The Source Four does that better than any other profile spot we've tried. We pretty much tried everything except the Altman Shakespeares."

SERVICE

"The service has been pretty good. We've just had a couple of problems where some of the guys have wound the lamps out a bit too hard and broken the thread knobs on the back. We had no trouble getting the housings and the appropriate bits. Jands have spend a fair bit of time expanding their service and retail network and here in Melbourne we have a few different options to get parts or we can get them shipped direct from Jands."

ROOM FOR IMPROVEMENT

"The lamp adjustment needs a little bit of work as it is too easy to break. In TV, because of the way we have to line up lights we like to shift the centre of the beam a fair bit and that's a little bit flimsy. I've also never been a fan of the Altman clamps which come with the fixture, again because we tend to hang things at weird angles. I replace them with barrel clamp to suit our hanging."

MAINTENANCE

"They are easy to get inside and they also drop very well! We've dropped one from 15ft and the lens didn't break (Rohan pointed out that this was an accident and not a standard GTV9 testing practice)"

CONCLUSION

"They are a great standard profile light and good for gobo projection and effects lighting. The 575w lamp is very instant so they're good for flashing. We use them for pretty much everything. They are also a good price for the



quality of the light.

"My advice to anyone looking at these lights is to buy them! They're not quite as bright as some of the 1200w stuff but they're half the size and the optical field is better. They are just a really good light."

Size: 5° - 89cm long, 10° - 69cm long, 19° - 50° 51cm long

Weight: 5° - 6.9 Kg, 10° - 6.2 Kg, 19° - 50° 6.2 Kg

Lamp type and rated hours: HPL 575w (240v) - 400 hours, HPL 575w (115v) - 2000 hours

Price in A\$ for Fixture and Hook Clamp: 5° - \$1690.00, 10° - \$1440.00, 19° - 50° - \$990.00

Price of lamp: 240v lamp - \$49.00, 110v lamp - \$33.00

*Tim Kennard of Jands thinks Rohan is being overcharged, see above.

- Manufactured by: ETC (1) 608 831 4116
- Distributor Aust: Jands Electronics (02) 9582 0909

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Le Maître



BUYERS GUIDE

PROFILE/PC SPOTS

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CCT*Rosco Australia (02) 9906 6262*

Minuette 650w T26 lamp, variable angle 10-59°, compact units weighs 2.5Kg, barndoors as accessories. The Minuette is the original pebble convex light. \$200.

Starlette 1K/1.2K PC gives a beam which is soft edged with little loss of light outside main beam area. Useful for short throw front of house position. \$510.

Starlette 2K/2.5K PC with similar characteristics to Starlette 1K. \$920.12

VISION*AC Lighting Ltd (02) 9369 2826*

V650 PC 300/500w; GY9.5 lamp base; 6°-58° beam spread; micro-switch isolation. Suitable for small theatres, studio and display applications. Price Ex Works London 147 pounds.

V1200 PC 1000/1200w; GX9.5 lamp base; 4°-70° beam spread; micro-switch isolation. Ideal for theatre and studio applications. Price Ex Works London 210 pounds.

V2500 PC 2000/2500w; G22 lamp base; 4°-62° beam spread; micro-switch isolation. Designed for studio applications on mid/long throws, with a concentrated well defined, haze-free beam. Price Ex Works London 390 pounds.

STRAND LIGHTING*Bytecrafft (03) 9587 2555 / (02) 9550 3955*

Quartet PC 650w compact economical spot with a Prism-Convex lens giving a tighter beam and wider range of beam angles from 7.5° to 55.5°. Uses T26 lamp, ideal for theatres, school stages, museums and display lighting. \$280.

Prelude PC 650w professional specification spotlight suitable for small to medium venues, high performance optics, uses T26 lamp, dual height stirrup, electrically isolated during lamp replacement. \$411.

Cantata PC 1200w powerful theatre spot with a Prism-Convex lens giving a tighter spot and wider range of beam angles than a Fresnel. Screw action focus adjustment varies the beam angle from 4.5° to 52.7°. Uses T19 lamp. \$579.

Alto PC 2000w high power high specification spotlight giving an intense beam of light with a less diffused edge than a Fresnel. Front and rear screw action focus provides a variable beam



between 4° and 58°. Uses CP92 lamp. Optional barndoors. \$ 140.

TEATRO*Lightmoves Technologies (02) 9560 0000*

Acuto 2000 a smooth screw re focus system, Acuto has a particularly even field of light without the usual dark centre or filament striation. Wire guard and lamp. \$1292.

Spazio 2000 generous size of lamp house permits excellent cooling at full power. Wider lens provides greater variation in beam angle. Lightweight aluminium construction. \$415.

Spazio 1200 constructed from a three part high pressure aluminium die casting shell. Finned ventilation 10Cmm aluminium reflector. Half peak 50-610. \$405.

Comma 650 comes with wire guard, gel frame and lamp. Suitable where good performance and attractive style are important. \$305.

COEMAR*Coemar De Sisti Australia (03) 9467 8666*

Corto beam spread: 3 deg. to 50 deg. Size(mm): (LWH) 225 x 204 x 245. Wattage: 300/500W GY9.5 Working Distance: 3m -10m. Complete with Colour Frame. Options include: Barndoors, Motorised Colour Wheel, Safety Wire Guard. \$207.

Solar 300/500/650 beam spread: 9.5 deg. to 38 deg. Size(mm): (LWH) 295 x 223 x 294. Wattage: 300/500/650W GY9.5 Working Dis-

tance: 4m -10m. Complete with Colour Frame. Options include: Barndoors, Motorised Colour Wheel, Safety Wire Guard. Also Available in 650/1K Version. \$220.

Passo 650/1K/1.2K beam spread: 5.5 deg. to 58 deg. Size(mm): (LWH) 435 x 290 x 400. Wattage: 650W/1K/1.2K GX9.5 Working Distance: 5m -18m. Complete with Colour Frame. Options include: Barndoors, Motorised Colour Wheel, Safety Wire Guard. \$320.

Passo 2K beam spread: 5 deg. to 60 deg. Size(mm): (LWH) 435 x 290 x 400. Wattage: 2K GY16 Working Distance: 5m -25m. Complete with Colour Frame. Options include: Barndoors, Motorised Colour Wheel, Safety Wire Guard. \$377.

TAS*Coemar De Sisti Australia (03) 9467 8666*

Spot 300/500 PC Eco approx. Beam spread: 8 deg. to 50 deg. Approx. Size(mm): (LWH) 225 x 204 x 245. Wattage: 300/500W GY9.5 Working Distance: 3m -10m. Complete with Colour Frame. Options include: Fixed & Rotating Barndoors. \$215.

Spot 650/1K/1.2K PC Eco approx. Beam spread: 7 deg. to 60 deg. Approx. Size(mm): (LWH) 400 x 250 x 300. Wattage: 650W/1K/1.2K GX9.5 Working Distance: 4m -16m. Complete with Colour Frame. Options include: Fixed & Rotating Barndoors. \$246.

Spot 650/1K/1.2K PC beam spread: 7 deg. to 60 deg. Size(mm): (LWH) 409 x 254 x 300. Wattage: 650W/1K/1.2K GX9.5 Working Distance: 4m -16m. Complete with Colour Frame. Options include: Fixed & Rotating Barndoors, Safety Wire Guard. \$327.

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Buyers Guide
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SEGA WORLD

continued from page 59

made with mediaval shields painted on them so that as the wheel slowly turns, the different colours of the shield produce the colours of light that are required. The colour wheel is a work of art in itself."

An interesting item which was developed but not used due to budget restrictions, was the sunset effect from one projector.

"We developed a way of projecting sunsets on to walls using one light," said Roger. "The rate of the setting sun would be controlled by DMX and the changing of the tints in the sky would also be controlled by DMX. So you'd have not only speed setting changing but colour changing in the one projector."

• **Cat Forcer**

Credits

Lighting Designer Roger Foley (FOGG)
Client Attractions International
 Mark Buczynski (Show Producer)
 Renato Franceschelli (Designer Theming)
Project Management David Murray and
 Paul Badawi, Caverstock Group Pty Ltd

Builder John Holland Construction & Engineering
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Consultants Barbara Williams,
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Audio Visuals Gavan Swift, Chameleon
Live Show Chris Sifton, Oracle
Laser Show Philip Cacayorin,
Audio Designer Themesapes International, Vancouver

REVIEW STUDIO COLOR

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CONCLUSION?

"A nice robust unit, we are quite pleased with it's performance. Useful for dance, opera, any larger or more lavish production where you have an open box set where you want to control and selectively illuminate that area. This is where these fixtures come into their own. One of the most impressive things is the colours you can produce - with the Whole Hog 2 you can dial up your Lee colour and get an exceptionally close match".

Size 483mm wide x 610mm high x 305mm deep. Weight: 30.9kg, which is manageable by one rigger
 Retail price is \$13,547.68 with 22% sales tax which includes a lamp.

- Good people to know: Chameleon Professional Lighting Sales, call +61 2 9310-5222
- Made by High End Systems, Austin Texas. Call +1 512-836-2242
- Australian Distributor: TechScape Lighting & Audio Distributors (formerly GUVT), call +61 7 3358-5118.
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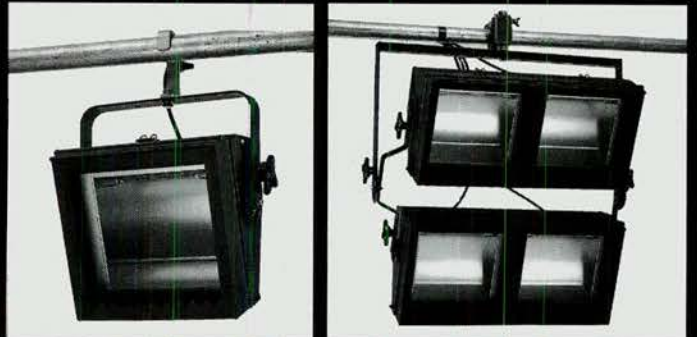
COMPLETE RANGE – single, dual (horizontal & vertical), four way linear batten, 4 way square Cyc lights, single and 4 way flood battens, single and 4 way groundrow batten. Pole-op tilt for Cyc and flood luminaires.

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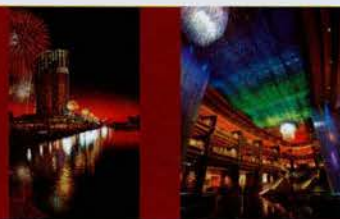
ROBUST – to withstand the rigours of touring, rental use etc.

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SELECON



The Western Entrance

Premier Lighting provide the Special FX

The Western Entrance Special Effects System is made up of three elements: Show Control; Audio; and Lighting. Premier Lighting of Melbourne installed the whole package although Dean Stevenson from AM Staging, Sydney did all the programming of the Dataton system. Barry Webb & Associates were one of the main consulting engineers with Roger Farley being the most involved person on the project. Andrew Holmes of Premier was Project Manager.

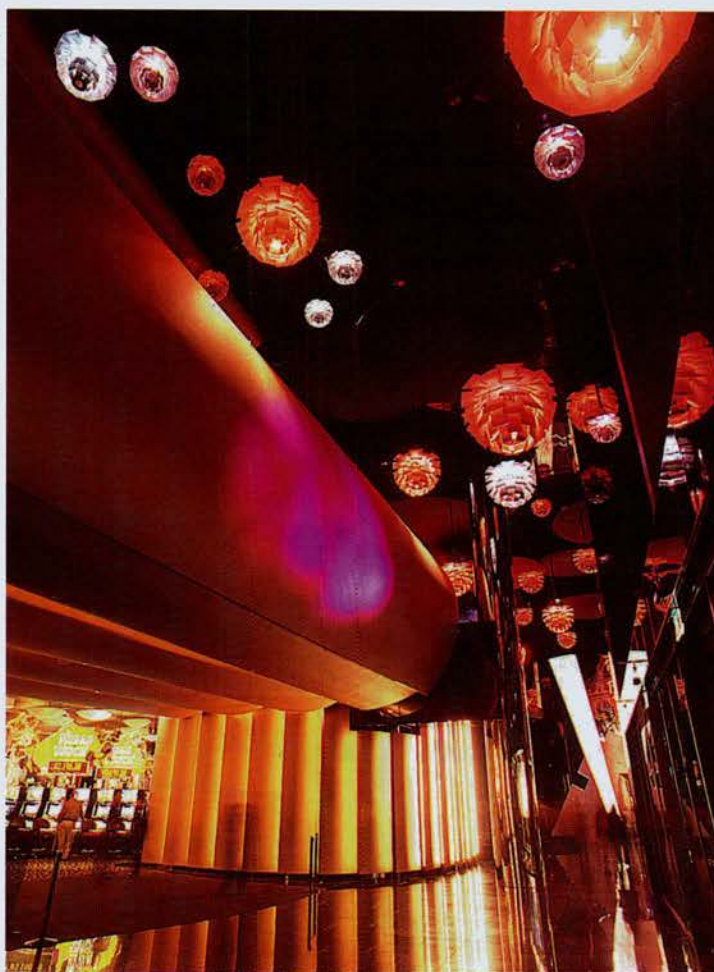
"Premier put in all the cabling, sound, lighting and did all the programming," said Andrew. "We basically walked into four bare walls."

The Show Control System is based on the Dataton Trax package which is made up of software (Mac OS) and Dataton hardware (Smartpax and Smartlinks). This system, depending on the time of day and light conditions selects and plays a CD of music and gives commands to the Sound Store for Sound FX. It then feeds the lighting desk time code.

The Dataton System also feeds a second stream of DMX to the dimmers to enable the system to bring up lighting states, independent to the lighting desk for loadshed and EWIS type commands which the system interfaces to.

"The original specification called for a PLC-type control base which we thought would make changing things like programs too complicated," said Andrew Holmes. "With the Dataton, changes can be made easily."

The main design element to the space are the 62 'Artichokes', a Louis Poulson fitting that essential looks like the aforementioned vegetable. There are four different sizes of Artichoke which consist of



polished stainless steel leaf (powder coated white on one side) which emulates out from a centre core. Inside each one of those, depending on what size it is, are three different lighting colours. Some have strobes, and some have Wildfire units inside of them - UV spotlights - and a douser on top of them.

"They then go under our 'Special Effects Discs' which are 3.2m and 4m discs suspended from the roof," explained Andrew. "On the discs are fireworks painted in Wildfire paint and each disc has 500 fibre optic ends doing the firework pattern. So in that given sequence, the sound effects of a firework exploding

go off, then the fibre optics do their routine (which have as fibre drivers modified Martin Pro 400's with custom made gobos to suit the fibre pattern enabling the fibres to start in the centre of the disc and go out like a firework), then the douser on the Wildfire unit opens which in turn reveals all the UV paint to complete a firework effect. All the UV stuff is hidden from view in the Artichoke."

Some of the Artichokes have downlights in them to light the area to regulation requirements and some have emergency lights in them. The space is very clean apart from the Artichokes but another feature is the 'wavey wall' and 'wavey ceiling'.

As you walk into the door of the Casino, you walk into an airlock type of arrangement and then out of the airlock into the main space where there's a centre doorway leading through to the actual Casino. A curved wall, which is steel painted gold, leads into that. The wall is constructed of about 40 segments which overlap each other like a wave.

In each segment there is a strip of light, containing 60 globes, which lights the preceding wall. The ceiling matches. Cyberlights are used to hit sections of the wavey wall and ceiling as well as the Artichokes.

The Lighting System consists of a Whole Hog II console, High End Systems LCD controller, Premier Lighting Techpac 2 Dimmer Racks, Cyberlight SV moving lights, Martin Pro 400's, and Datatronics Strobes.

The Show Control feeds the Whole Hog II desk time code, the lighting desk then replays a lighting cue or sequence which

continued on page 74

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LIGHTING UP THE SKIES

Bytecraft bring in Helicopters to install outside lighting

After a week of preparation in their new Hire and Distribution warehouse in Mordialloc, Bytecraft began the installation of the extra lighting for the opening of the Crown Entertainment Complex at 5.30am on Saturday 3rd May, six days before the official opening.

The first task was the Helicopter lifting of 4 x 7kW Moonscrapers and a variable-speed, multi-directional turntable onto the roof of the Crown Towers. The six pieces were lifted one by one from the Crown Park in Queensbridge Street. Safety precautions were tight. Whiteman street was closed to all traffic and the building and promenade below the flight path had to be secured and remain clear of all people in case of an emergency. The last piece was lifted into place by 8am. The Moonscrapers were mounted on the turntable and angled out to give a lighthouse effect visible all over Melbourne.

Meanwhile a 50 tonne crane was lifting 9 x Skyart 4kW Xenon lights, one onto each of the Soldier Towers along the north (river) side. The Skyarts are like a giant Icon, with full DMX control of colour changers and mechanical dousers. They were shipped in from Theatre Projects in the UK especially for the opening and were programmed to perform a variety of routines.

Also from TP were 2 x Skytracker 4kW single head searchlights which were placed by hand on either side of Crown Towers to light the lift shafts.

Programming of the various effects continued during the few days leading up to the opening and additional equipment was installed during this time, including a 4 head 2kW Skytracker on the roof of the carpark for opening night. This Skytracker had to be completely dismantled to get it in and out of the carpark.

The Hotel porte cochere was the main entrance for the guests at the opening. The area required additional lighting for the TV cameras and this was achieved by

using 6 x Strand Polux 5kW fresnels shining through the Skylights and 2 x 1200W followspots shooting from either end. A 4 head x 2kW Skytracker was on a platform by the entrance to provide more opening night atmosphere.

Inside the foyer 4 x Strand Castor 2kW fresnels were used to boost the general illumination for the filming while inside the complex 3 crew "gaffers" followed the cameras with Sunguns and 12 x Quartzcolor Redhead 800W to add light where required.

Also on the opening night two complete and identical outdoor stages were equipped at either end on the complex. A variety of acts performed and Bytecraft rigged out each using Parcans, Strand Cantata 1200W, Prelude 650W Profiles and Fresnels dimmed by a 48way Bytesize 'A' Touring Rack. It was controlled by a Strand GSX Control Desk.

All the additional TV lighting and the outdoor stage equipment was pulled out that Thursday night and the 9 x Skyarts were removed off the soldier towers at 4am on Monday.

• Cat Forcer



The Western Entrance

continued from page 72

outputs DMX to the data splitters in the Show Control rack. Two streams of DMX then go to the Special Effects Discs and Artichoke fittings. A further DMX stream feeds a second DMX splitter that in turn feeds all of the Techpac 2 racks.

The Techpac 2 racks handle all the dimming of the Artichoke, wavey wall and wavey ceiling fittings along with the downlights in the Artichokes, airlock and lobby.

The Techpac 2 racks also feed all the analogue control for the strobes in the Artichoke and Special Effects Discs. A second stream of DMX is fed into the B input of the Techpacs direct from the Show Control, this enables the Show Control to set down light levels or bring up a 'Lighting State' independently to the lighting desk on a HTP basis. This is used for loadshedding and EWIS conditions.

The Techpac 2, via the 'B DMX' input, fed from Show Control, handles the power switching of the Martin Pro 400's, Wild-fire units in the Artichoke fittings plus Strobe and Douser power.

The Show Control via an RS232 link controls the High End LCD Cyberlight controller which in turn feeds the High End protocol to a data splitter in the Show Control rack. This data splitter then feeds the Cyberlights. The power for the Cyberlights must remain on, as the units are shut down (as recommended by High End Systems) via the data splitter which is interfaced to the Show Control System.

The Audio System consists of CD players for the music and a Digital Sound Store for the Sound FX. These provide the inputs for the Peavey Media Matrix. The outputs of the Media Matrix feed the Apogee power amplifiers which feed the speakers.

The sound system has fourteen speakers in the special effects discs, six subwoofers in the ceiling, four speakers in the airlock and eight speakers in the wavey ceiling.

"The fourteen speakers are Apogee AE3's but they're not a standard box," said Andrew. "The Special Effects Discs are quite a strange shape and they are covered in a material called barosol. Underneath they have the firework effect with all the fibre optics and then a gauze across the bottom so you can't see the paint in the daylight. The disc, where we could put the speaker so it was accessible for things

CROWN

like maintenance, was a really weird shape. None of the standard speaker cabinets fitted. The architects would not allow any modification to the discs as far as a little box on top. Fortunately Apogee said they would build a special cabinet to fit the space that would match their AE3's, specification wise. Time was of the essence as they had already built most of the discs when we became involved. We had to measure their bits of aluminium in great detail, send it to the States and they made the cabinets for us with a three week turn around."

The subwoofers are Apogee AE10's, and in the airlock are SSM's. In the wavy ceiling it was required that the speakers be hidden so Sound Advanced CT62DM speakers were used as they can be plastered in out of view.

Because the space consists of glass and marble causing sound reflections, Premier

did a full acoustic mode, to ensure the success of the project.

As the speakers are controlled via the Media Matrix, the sound may be varied to

each individual speaker in the space, and a variety of EQ settings may also be achieved for each show or track of the CD.

• Cat Forcer



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CROWN

THE MERCURY LOUNGE

BIG sound kicks new gig into international scene

Finally, a venue that has been designed with both performer and the technology in mind. The Mercury Lounge, one of the new entertainment venues in the Crown Casino complex, is the performers' performance venue. Owned by Mushroom Records and Frontier Touring Company chief Michael Gudinski, the club's design is the result of detailed research into successful live music venues around the world.

The \$2.5 million club has a capacity of 800 people and is suited to small bands, touring international acts, and even concert set ups. Decorative bars are situated around the Lounge with the main bar being 16 metres long.

In terms of capacity, the Lounge is deceptively large. A mezzanine level and back bars allow for greater audience room and restaurant seating. Sightlines to the 8m x 8m stage area were a key component of the design and video screens positioned around the lounge give vision of the stage in detail.

The sound of the room has been carefully considered in the design and decoration of the room. There are lots of soft walls and few flat surfaces for the sound to bounce off so that acoustically the room sounds great.

Other design features include backstage facilities including dressing room, shower and toilet facilities, and a band room complete with Italian leather lounge suites. Another band room as part of the Crown Showroom can be used for larger bands. And loading is a dream with a drive in loading dock and a massive lift big enough for a car. From there equipment can be wheeled straight into place.

In keeping with the 'never close' attitude of the rest of the Crown Casino complex, The Mercury Lounge is open seven nights a week and has a 24 hour licence. Seated restaurant facilities are available between 6pm and 9pm,

then the room is set up for the evening entertainment. Live bands perform six nights a week with opening acts playing between 10 and 11.30pm, and the main acts starting around 11.30 and playing until 1.30am. After that the DJs come out and the lounge becomes a dance club.

An Audio Engineer's Wish List

Paul Sherrit is the house technician and audio engineer of the Mercury Lounge. He specified the equipment. After years of touring with Jimmy Barnes, Johnny Diesel and countless others, Paul is happy to be landed with looking after big name international performers in between the comings and goings of local bands.

"At the start of it they told me they wanted a decent PA so that people like Jimmy Barnes could use it for cabaret or duo set ups. So they said to me 'you do what you want', so I ordered all the gear - and they let me go for it."

\$400,000 was spent on audio, the tender was won by Sound on Stage from Sydney.

Paul talks me through the house system.

"We're running an EAW speaker sys-

tem - its great. We've got Crest amps and we've got so much power. Most speakers sound good with a lot of power. All the monitors and wedges are EAWs so everything is compatible and it makes a real difference."

The Front of House desk (Yamaha PM 3500, 52 Channel) is in prime mixing position directly in front of the stage. Despite being tucked under the staircase, Paul explains that even mixing locations have been allowed for in the venue's overall design.

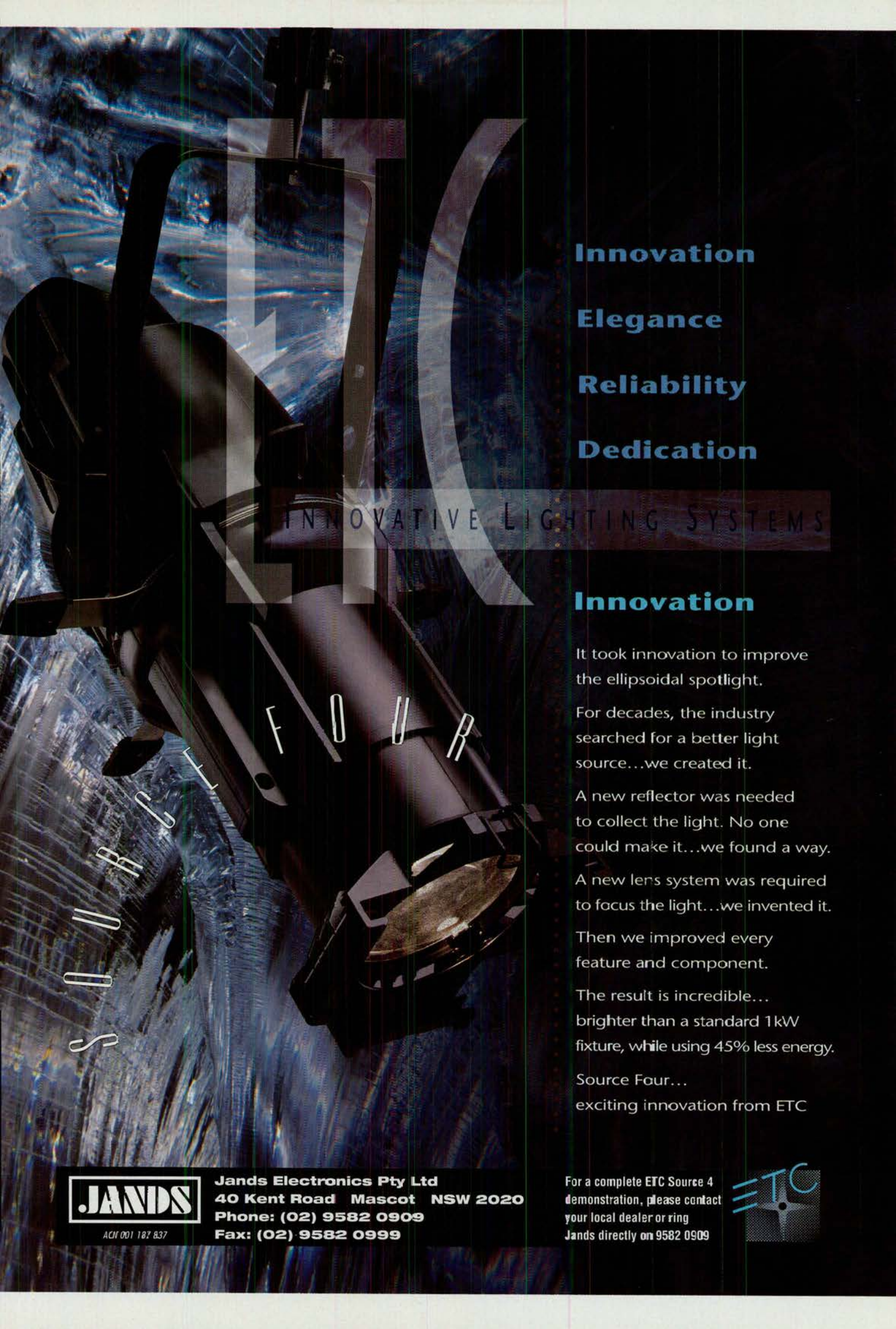
"Most of the time if you mix under a balcony you're stuck in a corner and you can't hear it. We've spent thousands on delay speakers just so you can hear the top end exactly the same under the balcony as it sounds out the front, and the same PAs for upstairs on the balcony, so that wherever you stand in the room it sounds the same."

Paul says that this attitude of 'only the best will do' has been consistent throughout the setting up of the Mercury Lounge, due largely to the involvement of Michael Gudinski and partner Frank Stivala.

continued on page 78



Photos: Marty Williams



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CROWN

THE MERCURY LOUNGE

continued from previous page

"They're happy to spend the money so that it does sound good. A lot of gigs you go to, you stand in front of the FOH guy and it sounds great, you walk five feet either side of it and it sounds like shit. Here they really do care, that's why they got the delay speakers and all the stuff like gates and compressors - they just make everything sound so clean. Their attitude is great - if you need it, get it. So I do."

On paper, the audio specifications for the lounge look more like an audio engineer's wish list than the actual set up of a venue.

"We send our production specs out to the band engineers and they can't believe it - its like a big toy. And for Sheryl Crow to say how great the system was, it must be pretty good."

Some bands bring their own engineers, otherwise it is up to Paul to mix on the night. So far he has had the pleasure of mixing for BB King and he is looking forward to working with some headline international acts. With a core group of three people looking after production, Paul explains that in the short time the lounge has been operational, they've worked out their system well.

"There's a good crew here - myself



looking after front of house, Yack's looking after the monitors, and Mack's doing the lights. We do all the changeovers and everything so the performers don't have to do anything, they just come in with their gear and they're away. All our crew has toiled for years with lots of bands so we know the deal. We're a good team."

Front of House

Paul shows me the front of house mixing

position. An enclosed booth, much of it is taken up by the console and the amps.

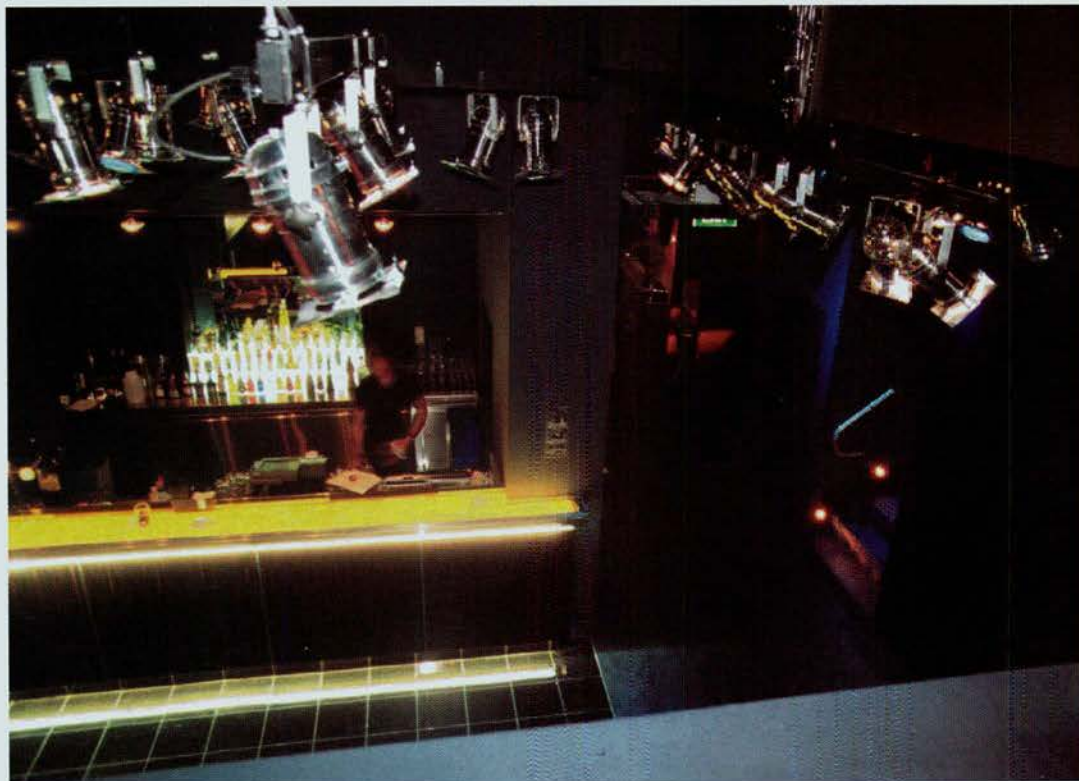
"The Yamaha PM 3500 is a good desk. There's only a couple of them in Melbourne. Its not as big as the 4000, its got more channels, but for an in-house desk you can have one band on one side and then put the support band on the other side so no-one touches each other's settings. The same with the Soundcraft (SM 12 40 channel) monitor board. Its so much easier to have two bands on there and not touch each other's stuff - especially after soundchecks when normally the support band changes all the set up.

SPECS:

- FOH Speakers: 6 x EAW KF 650 (15" low, 10" mid, & horn), and 4 x EAW SB250 subs (dual 15"). Powered by 2 Crest CA12 (subs) and 9 Crest CA9 (KF650's).

- FOH drive: EAW 8001 Stereo Processor and crossover, a Klark Teknik DN360 Dual 3rd Octave EQ, and an Ashly CLX52 compressor limiter over the entire mix.

- FOH effects rack includes 3 Drawmer DS201 Dual channel Noise Gates, 3 Behringer MDX2100 Dual Compressors, 2 Yamaha SPX 990



CROWN

THE MERCURY LOUNGE

FX, a Roland SDE 330 Delay, multi disk CD, cassette deck and video player.

- Delay zone with EAW JF80 speakers, Crest CA6 amp & drive.
- Stage Monitor system: Soundcraft SM12/40, 8 EAW SM200 IH wedges (2 x 12" drivers, 1 x 2" compression driver & horn), 1 EAW LA325 for drum fill (2 x 15", 2 x 6.5", 1 x 2" compression driver). Sidefill 2 x KF 650. Amps: 7 Crest 7301 biamped for wedges (900w/300w); 3 Crest CA9 for side and drumfill. Monitor EQ Klark DN360 x 4.

- All microphones, wireless and talkback supplied. It's a rig for a big gig!

Lighting

Mick Richardson is the house lighting technician for the Mercury Lounge. A freelance lighting operator for sixteen years, Mick has toured the country with many bands, and is grateful to be able to stay in the one place for a while.

"I've done my time on the road - this is quite handy, its consistent work!"

While the rig is somewhat basic in terms of size and range of lamps, Mick explains that the rig is a good starting point for bands, but more can always be added to it.

"For the size of the room and the bands we've had in here, the rig is adequate. Everyone's been happy with it so far."

The in-house stage lighting system consists of 24 par 64s, 8 Martin Pro 400s, 4 Martin 518s, and 8 Raylights. The dance floor grid is a separate rig made up of 10 Martin Pro 400s, and 2 Martin 518s. Mick runs everything off a Hog 250. Out the back there are 3 x 2.4 k dimmer racks, and 2 x 5k dimmer racks so there is plenty of power and plenty of room if bands want to bring in extra lighting.

The grid above stage is on four one tonne motors and is lowerable to stage level for rigging, as is the grid above the dance floor. Both are operated from the main control position.

"I wasn't asked to spec the lighting. That was all done through Graftons Lighting (not related to the editor of this magazine) in Sydney. But I'm happy with it. The Martins are good lamps - you can keep your numbers down as opposed to using a lot of par 64s. The Pro 400s have 16 colours, 3 iris sizes, lens sizes, so one lamp can do what 16 cans do in the way of colour."

"The 518s are a good moving light - they're perfect for the nightclub scene. We'll be getting some more of them somewhere down the track."

Mick explains that some bands bring their own lighting designers and operators so all he has to do is 'kick start it' for the night and then power it down at the end. He says that there are a lot of people who haven't used a Hog 250 before so he has had to do quite a bit of operating so far.

"The Hog 250 can be very intimidating if you don't know anything about it. The first day I walked in I hadn't used a Hog 250 so I had a major crash course in it. I've just been having hands on experience over the last eight weeks."

Paul sums it all up:

"The smaller bands love it - its not just for international bands. The overseas acts are good for the room but really, just any bands are good. This place is going to be like *Selinas* in Sydney or the *Roxy* in LA. It will be seen as the showcase gig that everyone will want to play. Its certainly not one of those venues where your feet stick to the carpet and nothing works."

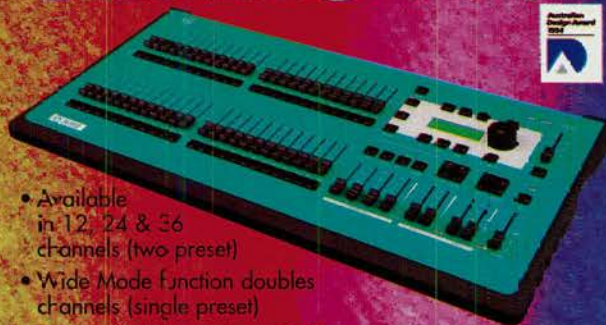
• Mandy Jones

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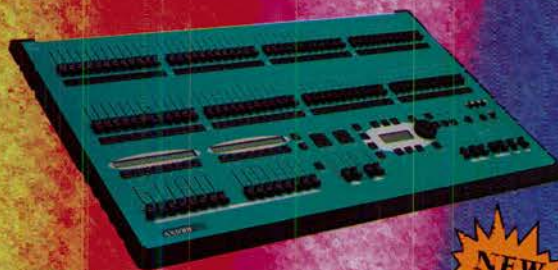


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CROWN

HEAT

THE HOT NEW NIGHTCLUB

Overlooking the Yarra River is Heat Discotheque and Cocktail Bar, part of the Crown Entertainment Complex. The exclusive danceclub is situated in the heart of the casino complex alongside The Mercury Lounge, The Odeon, and Jack's Bar (The John Farnham Tribute bar), and features three separate areas - the cocktail lounge, the discotheque, and the mezzanine.

The design of the main room is spacious featuring soft curves and levels. An abundance of chrome fittings and softly lit opaque glass gives the room a feeling of high tech glamour. Floor to ceiling windows along the Yarra side of the club show off an outdoor decking area which will be gorgeous during the summer months against the backdrop of the Melbourne skyline.

Amanda Harris, Heat Promotions Manager says it is the most expensive club in the world per square foot. Unable to put an exact price on the club, Amanda said it is in the \$4 million vicinity.

"What we're trying to do is bring back the glamour to night entertainment, and people really appreciate it. We've had full house every night including Mondays and Tuesdays which is unheard of. Everyone is enjoying dressing up in their nice evening wear and going to a club that's surroundings and decor are just exquisite."

The nightclub promoters say the club is not targeted to any particular age group. "Anyone who wants

to add a little style to their nights are welcome to come." That includes 18 year olds to thirty plus high rollers from the casino. Being new and exclusive, Heat has been attracting international stars as well as the darlings of the Australian entertainment industry, and the promoters believe it will continue to.

The main room features a huge island bar at the centre of the room, a sunken dance floor, padded bench seating inset to the walls, and glass cages over the dance floor for dancers.

The Cocktail lounge is an enclosed lounge area furnished with plush lounge seating. The lounge will be used for functions, such as bookings for 'after work



Photos: Marty Williams

drinks' and corporate functions, and will eventually feature small bands. With a 150 person capacity the lounge is a more sedate setting and is sure to attract the high rollers who are not quite at home in the techno scene.

Upstairs in the main part of the club is known as the mezzanine. With a capacity of 250 people, the mezzanine can be used for private functions and also turns into an intimate VIP lounge with bars at either end of the floor.

Outside on the mezzanine level is an open air rooftop garden complete with landscaped gardens and reflection pools.

With an overall capacity of 1500 people, Heat is going to have a marked impact on rival inner-city nightclubs.

COCKTAIL BAR SPECS

Audio

2 x T252 15" 2 way 800w trap stage system, P2000 Dual 900 watt power amplifier, 2 x FM12C way coaxial foldback wedges, 5 x P600 dual 250 watt power amplifier, DM12 12 channel non-powered stereo mixer, EQ231 Dual 31 Band Equal-

iser, EQ215 Dual 15 Band Equaliser, MS2500H Wireless Microphone system (with N/DYM 757 Head), Supercardioid Vocal N/DYM, 4 Constant directivity systems with 6.5 inch woofer and 1 inch tweeter, 4 x S60 Wall grills, 6 x S40 2 way compact monitors, 12U High Rack.

DJ & Karaoke

Technics SL1200 Turntable, Stanton 680E Stylus, 2000F Mk2 Denon Dual CD, Rane MP24 Mixer, Onkyo Dual cassette, 6 disc CD and laser disc players.

Lighting

4 x Martin RoboColor III Colour Changers, 1 x RoboColor III Controller, 1 x Martin 2308 Lighting Controller, 1 x Haze machine.

MAIN DANCE FLOOR AREA SPECS

Audio

6 x Electro-Voice Deltamax 12" + 2" Horn speakers, 2 x Controller for DML - 1122 providing crossover, equalization, 1 x P2000 Dual 900 watt power amplifier, 1 x P600 Dual 250 watt power amplifier, 2 x Dual 15" 1200 watt Sub (loaded with 2 x EVX150A's), 1 x Dual 1400 watt power amplifier.

DJ Booth

3 x Technics SL1200 Turntable, Stanton

"What we are trying to do is bring back glamour to night entertainment..."

CROWN

680E Stylus, 2000F Mk2 Denon Dual CD, Rane MP24 Mixer, Onkyo Dual Cassette player, Onkyo Laser Disc player, SX200a (internal 350w amp), 45u High Glass Front Lockable Rack with cooling fans, EQ231 Dual 31 Band Equaliser, DX34 Digital PA System controller, 2 x Digital Delay line 2 in 4 out, MS2500H Wireless Microphone system (with N/DYM 757 Head).

Video

Electrohome LCD Colour Projector 420 ANSI Lumens, EPS800 Mounting Kit, Draper 12' x 8' Video Motorized Screen with self tensioning, Video Distribution Amplifier, Sony Remote control pan tilt colour camera including controller, video switcher, Teac 14" colour monitor, panasonic Stereo SVHS VCR.

Lighting

9 x Martin Roboscan Pro 518, 4 x Martin RoboColor Pro 400, 12 x Shimmers, Chaser for Shimmers, 4 x Disco strobe with four channel controller, 3 foot diameter Mirror Ball with heavy duty motor, 2 x Haze machine.



Promoter: Amanda Harris

Audio Design: LAVA

Lighting Design: LAVA

Interior Design: Tony Chi

House Technicians: Jamieson and Lee from Wahoo Entertainment

DJs: Melbourne's most credited DJs

Theme nights: Sunday night is a Retro night with DJs Molly Meldrum and Andre Barallon. All other nights feature the latest dance music.

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THE PEOPLE AND THE PLACE

Directors: Glen Coburn, Glenn Watterson, Darren Thornburgh.

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THE PA PAGE

Don't Panic! Part one. By Michael Orland.

No matter who or what you are, no matter who or what you work with, there will always be one great sweeping truism in life: Shit Happens. When it does, you generally have three immediate courses of action to choose from.

1. run screaming into the street.
2. Find a quiet corner and curl up into a foetal position on the floor.
3. Deal with it. When you set up a sound system and shit happens, well I guess you could choose options 1 or 2, but your unlikely to be rebooked to work with the nights client in a hurry. Leaving option 3.

Fault finding under actual gig conditions can be pretty nerve wrecking stuff. It's all very well for me to say Don't Panic, when I've been known to do a few headless chook impersonations over the years, but I'll say it anyway. Don't Panic. You know, it's like when you're out driving and you're late, you're lost. You know you should get your bearings, pull over and spend a couple of minutes studying the street directory. But that old Mr Panic says you don't have the time, lets try a few side streets and see what happens. Well you might get lucky, but chances are you'll just get yourself more lost. So tell Mr Panic to sit down and shaddup. Think for a minute.

The first thing to do when you're told about a fault at a gig, is verify the fault. If you jump in, boots and all, trying to fix a fault that doesn't even exist, then often you'll actually create one.

Example One. You're doing monitors for a touring band. The stage guy runs over and screams at you that the guitarist on the far side has no bottom end in his wedges! O.K. before you start tearing racks apart, changing crossovers, swapping leads, setting up CROs, etc. first dart over and put your ear against the speaker in his wedge. Yeah right, fault my butt. The muso just wanted a little more bass in his vocal. He yells over his Marshall stack into the stage guy's ear who, even if he wasn't wearing ear plugs would only hear every second word. Lesson 1: If news of a "fault" originates from a muso, even if he is a dead set legend of an electronic genius 'cause he once built his own fuzzbox, then that news should be taken in a pillar of salt.

True life example two. You're fast asleep in the band room while the main band is halfway through their "killer" set. Their manager runs in screaming that the FOH guy has just lost all bottom end in the P.A.! Fix it NOW!.... O.K. be cool. Make your way out to the FOH desk, glancing at the bottom end loops on the way. Hmmmm.. there IS input signal registering on the meters, but only just. You get to the FOH and the sound guy is in a total flap because your "faulty" subs dropping out has killed the vibe, like totally. Again, fault my Aunt Fanny. You saw the mute light on the kick drum channel from halfway across the room. Pull the fader down, unmute, push the fader up. If the guys a gentleman he'll apologise or at least look a little humbled. If he's an asswipe, he won't acknowledge his mistake and may even insist that the manager not hire this "faulty" rig again. Don't spin. One day his Karma will back up over his dogma, and he'll be exposed for the fraud he is. Example 2's lesson; look for human error first.

Once you confirm a fault actually exists, the next thing to do is trace it to the cause. This involves a process of elimination combined with basic logic. The word "logic" can conjure images of men in white coats with thick glasses and clipboards, or Vulcans. Don't be too dismissive. Developing your talent for logic is essential to fault finding. I recall schooldays when each premise would be represented by a circle and the area where the circles overlapped would represent the conclusion. Try and recognise silly logic when it is presented. Woody Allen quote; 1: All Greeks are men. 2: Socrates was a man. Therefore 3: All Man are Socrates. Silly.

Another silly example. I hired out a new powered mixer a couple of months ago. The amplifier component was protected with a thermal cutout which triggered an internal fan. The system was used outdoors on a hot day, and was obviously (to me) underpowered for what the job required. Every time it would overheat, the amplifier would cut out and the fan turned on. The hirer therefore concludes that the fan turning on is causing the sound

to stop. So he takes the thing apart and disconnects the fan.

Recognising such silly logic makes it easier to recognise true logic. Let's go back to our scenario of bottom end dropping out. Nothing amiss at the desk at the time. O.K. call up a quick mental picture of the audio chain involved. Run up a mental list of possibilities: faulty amps, faulty crossover/processor, poor connection between the two etc, etc. As they say on ER, if you hear hoofbeats, think horses not zebras. In other words, once you have your list of possibilities, think about what is most LIKELY. You may feel quite clever coming up with a possible answer from "outside the square", but once the possibility becomes too remote it also becomes irrelevant. In this case, the most likely culprit is the lead between crossover and amps. At one tight little gig I did, unbeknownst to me, the guitarist had sat his guitar stand on the amprack hidden behind a speaker stack. The stand vibrated off pulling out a connector on the way down.

Of course, answers aren't always so obvious. Sometimes you can work your way through a list of possibilities and still not find the answer. More about this next month. Meanwhile, remember if you can keep your head when all around you have lost theirs, you'll emerge the tallest person in the room.

For those confused by the second last paragraph in last month's article on wiring insert looms, here is the rewrite:

As explained previously, the lettering identifying each pin starts at the outside and spirals its way to the centre. I use pin A as channel 1 send neg. Pin B is channel 1 send pos. Pin C is channel 1 return neg. Pin D is channel 1 return pos. Pin E is channel 2 send neg. Etc. etc. 4 pins per channel. 12 channels. 48 pins. Each shielded pair from the panel mount connector in the rack has the shield connected only at the TRS jack.

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